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Address.

ANCIENT AND MODERN CONCEPTION OF SYPHILIS.

HAIRMAN'S ADDRESS, DELIVERED BEFORE THE SECTION ON CUTANEOUS MEDICINE AND SURGERY, AT THE FIFTY-SECOND ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

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During the centuries that have elapsed since syphilis ras demarcated as a definite disorder nosologically, iews have appeared, disappeared, and reappeared as o its origin and relation to other disorders. Dominance f judicial astrology, at the time of the Naples epi-lemic, led Steber, of Vienna, in 1494, to claim syphilis s a new disease, due to the conjunction of planets. rünbeck, of Burkhausen, in 1496, charged the disease o the work of Saturn and Mars causing corruption of he blood and bile. Leoniceno, of Lombardy, about he same period, was skeptical as to the occult factors f the origin of the disease. He disbelieved in the origin n divine wrath against blasphemy, which led the em-eror Maximilian to issue an edict. He also disbelieved n judicial astrology, and charged the epidemic to a ertain unseasonableness of the air. He pointed out hat in 1494 inundations occurred all over Europe, and hat it was not surprising that in the wake of such henomena the summer atmosphere acquired those hot nd moist qualities which physicians and philosophers egard as the generating cause of all putrid germs. nundations rapidly develop a general putrefaction of he air and soil. They may not only determine pesti-ential affections —*pestilentia*—like those in the 15th entury, but also prepare for other diseases in the uture.

Here, Leoniceno forms a conception of the relations f syphilis to general nosology, which has since main-ained its own. While syphilis has since been endemic, t rarely assumes a type which could be denominated pidemic. About the time of Leoniceno, the view was ntertained that syphilis was *leprosy modified* by coin-ident nosologic factors. Many 15th and 16th century hysicians believed that syphilis arose from the stings f venomous insects. Indeed, Americus Vespucci laimed that the Indian women used venomous insects o stimulate the genitals of their lovers. In all proba-ility, the peculiarly marked adenopathic character of he epidemic of the 15th century played a large part n lending credence to this venomous insect hypothesis. he adenopathic character of syphilis sometimes ap-ears to-day to an extent that at once puzzles and inter-sts the syphilographer.

No great epidemic has appeared since that of the 5th and 16th centuries. Epidemics of every disease, in the 15th, 16th and 17th centuries, exhibited a decided adenopathic tendency. Constitutional peculiarities at that time doubtless played a large part as predisposing causes, just as the neuropathic tendency of the present day plays a large part in the production of the luetic neuroses.

About 1540, the furibund character of syphilis began to disappear. Probably inherited immunity played a part in this, as well as the fact that the Galenic physicians, stirred by the assaults of Paracelsus, took a more active part in treatment. Antoine Lecocq, in 1540, noticed that syphilis begun to lose its furibund, galloping character. Fracastor, at the same time, remarked that the disease had been markedly modified. Patients had but few pustules and slight shin pains; but more gummata were observed. The hair exhibited a greater tendency to fall out; sometimes the teeth became loose and fell out. The attention of Rabelais was early attracted to syphilis, because his generous disposition drew him toward this neglected class of patients. In 1538 he made great efforts to reform the treatment of these patients at Paris. Rabelais had "often seen syphilitics when greased with mercurial ointment; their faces on edge like a knife and their teeth clacking like the keyboard of a broken-down organ."

ETIOLOGY.

The germ, or animalcular theory of disease, began to assume prominence early in the 17th century. Blankard, a Hollander, had stated: "In the seed of men, and in that moist matter which women carry in their wombs and in their sheaths, are found small animals, which, being venomous, corrupt not only the genital parts, but even, growing in time to large quantities, thrust themselves everywhere in the blood." By the middle of the century even the clergymen were acquainted with this theory. Thus, commingled with the fetichism of Cotton Mather, is found a chapter on the animalcular origin of disease, at the end of which, in describing remedies for this supposed source of distempers, he remarks: "Mercury, we know thee! But we are afraid that thou, too, will kill us if we employ thee to kill them that kill us! And yet, for the cleansing of small blood vessels and making way for the free circulation of the blood and lymph there is nothing like mercurial deobstruents."

Ballay, in the 18th century, claimed that the iguana to which Mark Lister charged syphilis, contained a "small species of animal" which he called venereal virus. He states, much less logically than Mather but in accordance with a view now strongly dominant, that mercury would not have the virtue of curing lues, were it not kept up by small insects, visible only under the microscope. Thirty years before, Ballay, Diedier and Desault had claimed that the venereal leven consisted of "imperceptible worms." Boerhaave strongly opposed.

and, in the opinion of his admirers, completely battered down the hypothesis of the imperceptible worm or animalcula.

The doctrine of disguised venereal diseases flourished. All unusual morbidities which could not be explained were attributed to concealed venereal disease without distinct symptoms. Furstenau charged hysterical phenomena to the driving in of a venereal virus by badly-directed treatment. Rosen, in 1764, made himself the apostle of this doctrine and accepted as hereditary some symptoms of recent syphilis in two 30-year-old patients. Van Swieten, in refusing to admit the heredity of syphilis, momentarily checked this theory. Stoll restored it to its dominance and Fabre was one of its warmest partisans. To a certain extent, this belief was an outgrowth of the tendency to demarcate diathesis which marked the time. Hahnemann, under the influence of this tendency, with that curious distortion of logic which so often suggests in him, paranoiac twist, ignoring the demonstration of the parasitic origin of the itch, charged psora or scabies with being a diathetic state having much more dangerous consequences than syphilis. "This thousand-headed monster of disease does," he remarks,[1] "cause internal affections (after eruptions sometimes containing only a few vesicles), accompanied by intolerable, voluptuous itching, and a peculiar odor. The psora—itch—is the only real, fundamental cause and producer of all the other numerous, I might say innumerable causes of disease—hysteria, mania, epilepsy, convulsions of all sorts, softening of the bones, cancer, gout, jaundice, cyanosis, dropsy, amenorrhea, hemorrhage from the stomach, lungs, nose, bladder and womb, paralysis, and pains of a thousand kinds, etc.—that figure in systematic works on pathology, as peculiar and independent diseases." Despite the demonstration in his time of the itch insect, Hahnemann permanently stamped this etiologic theory into modern homeopathic nosology and therapeusis.

To a certain extent, as to-day, teleologic notions anent the duty of the physician to preach sermons on debauchery in lieu of studying disease, increased this belief in disguised syphilis. Clinical recognition of the anomalies of syphilis, moreover, leads to a bias in favor of syphilitic etiology. Ricord, Dr. Oliver Wendell Holmes remarks, was the "Voltaire of pelvic literature, a skeptic as to the morality of the race in general, who would have submitted Diana to treatment with his specifics and ordered a dose of blue pill for the vestal virgins." While Buret and others have taken up the cudgels strongly for the purely specific nature of syphilis, still the modern trend of opinion strongly favors this 18th century notion, cleared of obscurity by 19th century biochemistry. The toxin of syphilis is now recognized as producing effects non-specific in character and resistant to antiluetic treatment. Lues, like all the great contagions, is now known to produce arrests of development resultant in defective constitutions.

During the 19th century a singular swerving occurred in views held as to lues. While, at the outset of the century, lues was considered as a disease modified by the constitution which it attacked, and the condition of that constitution at the time at which it occurred, by the middle of the century it was looked upon as a disease *per se*, which had little or no relation to constitution or to the patient's condition when attacked. In this particular, opinion concerning it followed the same evolution as views of other contagious diseases. The doctrine of specifics in therapy played no small part in determining this. Lues was likewise separated by nosologists from other diseases, on the teleologic ground that, not occurring in the lower animals, it was a product merely of human debauchery. This view of the disease appeared soon after the great epidemic of the 15th century. Many Galenic physicians, like too many English medical men of to-day, regarded it beneath their dignity to treat a disease of this kind. In England, despite the example of the great biologist, John Hunter, medical men still use venereal diseases merely as a starting point in practice. At the middle of the 18th century it was a common thing for beginners to establish dispensaries for this purpose. Smollett remarks, anent Fathom's attempt to secure practice: "The other means used to force trade, such as ordering himself to be called from church, alarming the neighborhood with knocking at his door at night, receiving sudden messages in places of resort and inserting his cures by way of news in daily papers had been so injudiciously hackneyed by every desperate sculler in physic, that they had lost their effect upon the public and therefore were excluded from the plan of our adventurer, whose scheme for the present was to exert himself in winning the favor of those sage sibyls who keep, as it were, the temple of medicine and admit the young priest to the service of the altar; but this he considered as a temporary project only, until he should have acquired interest enough to erect a hospital, lock, or infirmary, by the voluntary subscription of his friends—a scheme which had succeeded to a miracle with many of the profession who had raised themselves into notice upon the carcasses of the poor.

"Yet even this branch was already overstocked, insomuch that almost every street was furnished with one of these charitable receptacles, which, instead of diminishing the taxes for the maintenance of the poor, encouraged the vulgar to be idle and dissolute by opening an asylum to them and their families from the diseases of poverty and intemperance; for it remains to be proved that the parish rates are decreased, the bills of mortality lessened, the people more numerous, or the streets less infested with beggars, notwithstanding the immense sums yearly granted by individuals for the relief of the indigent."

The "lock" was then, as now, in England, the appellation of a hospital for venereal diseases.

Among the factors charged with the creation of the epidemic in Naples, was bestiality. This opinion was based on a theory that morphology of the contagion is affected by a culture medium. This opinion, experiments of Dr. G. F. Lydston have shown, there is reason to believe, since morphology of both the streptococcus and the gonococcus may be affected by the culture medium. The changeable nature of the vaginal secretions and the difference between human and animal vaginal secretions, were believed to have originated by fermentation—the peculiar qualities of the epidemic lues of the 15th century. While it was long thought that venereal diseases were unknown and incommunicable to animals, investigations during the last half of the 19th century demonstrated the existence of an adenopathic epidemic disorder among horses, known as dourine, and also as *maladie du coit*. This disorder, as Dr. R. J. Withers demonstrated a decade ago, before the Chicago Academy of Medicine, is in many particulars akin to furibund, adenopathic syphilis. It seems to bear the same relation to human syphilis that acute tuberculosis of cattle does to human tuberculosis. Some medical reports of the epidemic of the 15th century refer to syphilis among horses and cattle. Probably much of this was dourine, since horses were then brought in great numbers from Arabia and from North Africa, where dourine is comparatively common.

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[1] Organon, p. 113.

The 18th century was marked by clinical demarcations of the different diseases charged to venery. In the early part of the century the distinction between gonorrhea and the other diseases had been pointed out, and had even been used by Swift in his "Tale of a Tub"; still, the disorder remained unnamed until the close of the century, when Swediaur revived the term gonorrhea, under which title—as etymology shows—the Greeks had placed indifferently, blenorrhagia, prostatic discharges and spermatorrhea. Two years after Swediaur, however, Hunter attempted to demonstrate that gonorrhea and lues were the same disease, and, through an undiagnosed lues in a gonorrheic, seemingly proved it. Tode, just before Hunter, had denied the possibility of luetic infection from gonorrhea. Hunter's experiment demolished the position of Tode and pointed out once more that error always lies in absolute assertions. Bell, in 1793, demonstrated that while gonorrhea and lues occasionally complicated each other, they were distinct disorders. The demarcation between hard and soft chancre was not established until 1852, by Bassereau, a pupil of Ricod. This distinction, even yet, is not totally accepted in therapeusis.

The problems of syphilography for the 20th century, as outlined by syphilographers in the 19th century and remote past are:

1. The early diagnosis of the disease where primary sore is either not recognized, as in extra, genital syphilis, or where it is abnormal.
2. The determination as to what predisposition produces the serious nervous and other consequences of tertiary lues.

Arising from this problem comes a secondary one: To determine the predispositions leading to the parasyphiloses. The next thing is to determine the influence of other diseases, whether malign or benign, upon syphilis. The bacteriology and bacterio-morphology of lues and other venereal diseases remain to be worked out. Practically, here, in regard to lues, there is not much advance beyond the guesses of the 17th century. In dealing with bacterio-morphology, the culture medium furnished by various lymphatic systems of man and animals needs determination. Since dourine in epidemic type has frequently to be dealt with by state veterinarians, material can be procured which would throw the same light on lues that lung plague in cattle has thrown upon pneumonia, and that cattle tuberculosis has thrown upon phthisis. In therapy, the problem is to avoid excesses of mercurialization and iodization, to treat secondary mixed infections and toxemias, and to treat the general systemic nervous exhaustion as well as the mental state of the luetic patient. Syphilographers practically must recognize that co-existent syphilophobia is almost as much of a physical depressant as syphilis itself.

Culices Make War on Anopheles.—Sir William MacGregor, governor of Lagos, British West Africa, in a paper read at the British Medical Association, stated that he had placed twenty each of the larvæ of the culex and the anopheles together in water. The anopheles were soon destroyed by the culices, showing that the latter might be made use of as an exterminator of the malaria-propagating anopheles.

Original Articles.

INTRA-UTERINE AMPUTATIONS.

PROBABLY CAUSED BY FIBRIN ABNORMALLY PRESENT IN THE LIQUOR AMNII.*

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Intra-uterine amputations are of sufficiently frequent occurrence to excite professional curiosity as to the causes which produce them. I wish briefly to call your attention to a case which occurred in my practice, and I do so perhaps more for the purpose of seeking light than of exploiting a theory.

Two and a half years ago, while officiating as obstetrician, I found a baby which had just been born minus some fingers and toes. I did not know of the abnormality until my attention was called to it by the nurse on the occasion of my next visit, some fifteen hours after the birth. I then found constricting bands of what appeared to be dried fibrin encircling several of the fingers and toes, which were evidently doing the amputating.

After the constrictions had been removed some of the members in the course of time fell off, having been strangulated to such an extent that they could not recover. Others remained and still show very distinctly, as you see by the photographs, the marks of the constricting bands. Fingers which had already been amputated were undergoing re-amputation at points nearer their origin. In other cases two members were cut off by one constriction and at the same time united to each other at the point of amputation. This happened to the two fingers involved on the right hand, which were afterwards separated by the knife.

The baby which was the first one was normal in all other respects and is to-day strong and vigorous. The parents are healthy. Family history is good. The second baby, now a month old, was born in normal condition.

It is not my intention to theorize, but I am inclined to the opinion that the trouble in this case arose from the abnormal presence of fibrin in the liquor amnii.

The causes of intra-uterine amputations, as given by the text-books, are: amniotic bands, inflammations, intra-uterine fractures, and constrictions by the cord. It would seem reasonable also that the amniotic bands so called might be due to fibrin deposited upon a part from the liquor amnii in the same way that it is deposited by whipping fresh blood, constricting the part, causing arrest of development beyond the point of constriction, and subsequent amputation.

The liquor amnii during the first half of pregnancy being almost pure blood serum, this phenomenon might be caused in the same manner as thrombus, embolus, or heart-clot. The liquor amnii may be open to unknown sources of contamination or the accidental introduction of the so-called fibrin ferment and the membranes could offer but poor protection to a fluid so easily infected.

The exact origin of the amniotic bands is not stated in the books, but the majority of writers leave us to infer that they are *all* out-growths from the inner surface of the amnion, and here is where I wish to respectfully take issue with them.

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* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Obstetrics and Diseases of Women, and approved for publication by the Executive Committee of the Section: Drs. A. H. Cordier, W. E. B. Davis and Henry P. Newman.

Lusk says: "An abnormally small quantity of liquor amnii is, however, only of importance in the earlier stages of fetal development. If the amnion be not then separated from the fetus by an adequate amount of fluid, abnormal amniotic foldings and adhesions between the amnion and the surface of the fetus may take place. The so-called feto-amniotic bands thus formed may, by mechanical compression, result in various fetal deformities or in spontaneous intra-uterine amputation."

Muller says: "Adhesion between parts of the fetus and the amnion are favored by a deficiency in the amount of amniotic fluid. If these points of adhesion become firmer or vascular they may persist, and if the process develops at an early term of fetal life, the regular development at that point will be arrested, giving rise to morphological anomalies which consist in the failure of union between two parts, such as hare-lip, exstrophy of the bladder, etc. If these amniotic bands are attached to the edge of fetal cleavage the cavities are particularly likely to remain open, giving rise to ectopia."

Again, I quote from the "American Text-Book of Obstetrics": "Amniotic bands disturb the development of the extremities, chiefly by producing constrictions causing at the peripheral end edema or atrophy. If this strangulation takes place at a very early date of fetal life then the growth of that part will be greatly arrested, so that the peripheral end beyond the constriction is proportionately small; in other cases it produces death of the part and so-called spontaneous amputation." The same authority says: "It is now generally admitted that the existence of amniotic bands is one of the causes for intra-uterine amputation. This amputation usually takes place early in fetal life. Sometimes there are a number of these bands and they persist to the time of birth."

These writers describe exactly what happens. But I wish to suggest that adhesions between the amnion and the fetus are more apt to cause distortions, producing so-called monstrosities, than clean-cut amputations. In the case here presented, we have no good reason for believing that what occurred was the result of contact with the amniotic surface or of a lack of fluid. When we stop to consider the position of the fetus in utero with legs drawn in, and the arms flexed and folded, it appears to me quite improbable that these members ever come in such constant and intimate contact with the amnion as to become adherent, but that, being the parts which are free and in almost continuous motion, they pick up the fibrin from the liquor amnii when it is abnormally present.

The question arises, would such a deposit of fibrin with the consequent constriction and atrophy taken in connection with the movements of a vigorous baby amputate *any* limb? I have seen a case where both arms and both thighs were taken off at or about the junction of the middle and upper thirds. The subject of this mishap was until quite recently a member of the British Parliament.

Trailing Skirts.—Notices are posted in some places in Switzerland informing wearers of trailing skirts that they will be fined. At Ems, Prussia, trailers are not allowed in the public gardens.

ECTOPIC PREGNANCY, WITH REPORT OF A CASE OF OVARIAN PREGNANCY.[*]

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I do not believe that it is possible for an ectopic pregnancy to develop primarily in the peritoneal cavity, for the ovum can not be lodged securely in any one place sufficiently long to form chorionic attachments, and the peritoneal secretion would very soon destroy its vitality; the one or more cases of reported abdominal pregnancy, after removal of the uterus, were primarily tubal or ovarian, these organs not having been removed with the uterus.

Ectopic pregnancy must be primarily tubal, tubo-ovarian, or ovarian, but as it can not develop to term in any of these structures, it ruptures either into the folds of the broad ligament or into the peritoneal cavity; and if the chorionic attachments are not then destroyed, there is no reason why the pregnancy may not continue to term.

I believe that most cases reported as intra-peritoneal pregnancy are extra-peritoneal, having developed in the folds of the broad ligament, or having then separated the peritoneum from its attachment, either extending upward posteriorly, or anteriorly between the peritoneum and the abdominal wall.

A case recently reported, in *American Medicine*, by Drs. Cullen and Goldsborough as probably abdominal pregnancy resulting from rupture of the uterus, is evidently a case of extra-uterine pregnancy, being primarily tubal, which ruptured into the layers of the broad ligament, and then separated the peritoneum from the anterior abdominal wall; and when they entered the cavity containing the fetus and membranes they did not open the peritoneal cavity. I make this positive assertion, because I am sure that if they will carefully examine the uterus of the woman they will find it in a normal condition. I refer to this case because of the prominence of the parties, thereby emphasizing the fact that there is generally an error in the diagnosis of what is styled intra-peritoneal or abdominal pregnancy. While the pregnancy is primarily nearly invariably tubal, or tubo-ovarian, there are two cases recently reported where it is claimed to have been shown to be primarily ovarian; namely, the case of Dr. G. P. Anning and Mr. Harry Littlewood, and the case of Dr. Catherine van Tussenbroek, as will be seen in the following extract,[1] and in a letter from Dr. Bland-Sutton.

DR. G. P. ANNING and MR. HARRY LITTLEWOOD read a paper on a case of primary ovarian pregnancy with rupture fourteen days after last menstruation.

The patient was aged 28 years, married five months, with no previous pregnancy. Menstruation was usually normal. She was operated upon on August 27, 1900, for a ruptured ectopic gestation, about thirty-six hours after the rupture. About two pints of blood and clots were removed, and a small ovum about the size of a Barcelona nut was found. This fitted into a firm envelope composed of laminated clot. There was a rent in the right ovary leading to a cavity, which contained some blood; into this the ovum and its sac exactly fitted, clearly indicating the primary ovarian origin of the pregnancy. The right tube was removed, and showed no evidence of rupture. The left tube was examined and found normal. The cystic portion of the left ovary was removed. The patient made a good recovery. The specimens were shown, with microscopical sections of the ovum, the sac, and a portion of the ovarian wall.

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[*] Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Obstetrics and Diseases of Women, and approved for publication by the Executive Committee of the Section: Drs. A. H. Cordier, W. E. B. Davis and Henry P. Newman.

[1] *British Med. Jour.*, Jan. 12, 1901.

MR. BLAND-SUTTON remarked that belief in ovarian pregnancy could be traced back more than two centuries, but a critical examination of recorded cases, showed that in some instances the supposed ovarian fetus was in reality a dermoid, and in others a sequestered fetus (lithopedion) in the broad ligament. In a few instances the account of the dissection was so careful and circumstantial as to leave the impression that the formation of the embryo in the ovary could not be denied. It must also be borne in mind that the modern cases prior to 1899 rested upon no safer evidence than the non-detection of the ovary during an operation or upon the postmortem examination of a person with an advanced extra-uterine gestation. Even so careful and judicious a writer as Dr. Farre did not deny the possibility of a spermatozoon entering an ovarian follicle, but he denied that any case of ovarian gestation had been satisfactorily proved. Mr. Bland-Sutton came to the same conclusion after a study of a much larger number of specimens than were available to Dr. Farre, and with the advantage of modern methods of histological research. His (Bland-Sutton's) investigations had been particularly directed to the very early stages, for he urged as a postulate that, if the ovum was really capable of being fertilized in its follicle, "an early embryo in its membranes contained in a sac in the ovary" should be forthcoming. He was convinced that the specimen now before the Society was an example of early ovarian pregnancy. The only possible objection that could be raised to this view depended on the fact that the authors had not taken any steps to prove that the "mole" had not been ejected through the celomic ostium of the tube (tubal abortion). He would not press this objection because he had sections of a more complete specimen which quite satisfied him that an ovum could be fertilized while in its follicle. Since the last meeting Mr. Bland-Sutton had visited Amsterdam, and through the courtesy of Dr. Catherine van Tussenbroek, had been able to see the early example of ovarian pregnancy described by her, and had brought back sections which would be available for inspection by any Fellow of the Society. The condition of the parts was exactly analogous to that of a tubal mole, so that for convenience of reference it would be spoken of as an "ovarian mole"; the blood corpuscles in the vessels of the villi were nucleated; there was no trace of a decidua in the ovarian follicle, and it was an interesting fact that in the clinical report of the case it was stated that a decidua had formed in the uterus, and a few days after the operation was discharged with the *douleurs d'accouchement*. The "mole," with its chorionic villi which had become the criterion for many cases of early tubal pregnancy, seemed likely, from this specimen, to become the criterion of early ovarian pregnancy also, and a large field of inquiry had thus been opened, for the condition known as blood cysts of the ovary would now require very careful investigation in the new light afforded by this specimen.

"LONDON, May 7, 1901.

"Dear Doctor Wathen:—The sac in the van Tussenbroek specimen contained an embryo. I satisfied myself on this point when examining the sections. That case is complete in every particular. Yours very truly, J. BLAND SUTTON."

"P. S.—No embryo was found in Anning's case. The van Tussenbroeck case was reported in extenso in the *Ann. de Gyn. et de Obstet.*, under the title "Un Cas de Grossesse Ovarienne."

By studying this extract carefully, and Dr. Sutton's letter, it will be clearly seen that in no case has an embryo ever been seen, and the assertion that there has been an embryo rests solely upon macroscopic and microscopic examination of the membranes. I contend that the opportunities for error in such examinations are so abundant that it is doubtful if we are justified in accepting such cases as genuine unless the embryo can be seen, as in the specimen I now exhibit, which must be accepted as positively ovarian, unless we deny that any case can be such with the tube not patulous in its entirety, with no closure of the outer extremity. By examining this specimen, you will see that the tube has not been ruptured in any place, but that the fimbriated extremity has become adherent to the sac cavity, which I claim is the result of an irritation caused at the time of rupture, and hemorrhage.

It is a well-known fact that, in all structures in the peritoneal cavity nature tries to protect the life of the individual by a rapid formation of adhesions to prevent further extension of injury, and why should there be an exception in this case?

As microscopic examinations show that sections taken from all parts of the sac from which the laminated clot containing the embryo was removed are positively ovarian tissue, there can be no doubt as to the impregnation having occurred in the Graafian follicle, and that the ovum never escaped from this cavity. Within the center of the laminated clot, there was an unbroken amnion containing an ounce of liquid, and an embryo of about six weeks' development in a state of perfect preservation, which can be seen by examining the specimen.

If ectopic pregnancy be diagnosticated before rupture, there is no operation in which the peritoneal cavity is opened that is more easily performed, or more successful. This may be accomplished by either the vaginal or the abdominal route. After the rupture has occurred, the selection of the method depends upon the condition existing. If the rupture is in the folds of the broad ligament, with few exceptions the operation can be completed successfully by the vaginal method; and I have within the last five years performed nine-tenths of my operations for ectopic pregnancy by this method, and have had but one death, which was the result of long delay and general sepsis before the operation. So demonstrated facts outweigh theory of those who oppose the vaginal route.

If the rupture is intra-peritoneal, the operation may often be performed by the vaginal method, and if conditions are encountered that can not be overcome, we may speedily open the abdomen and have the advantage of excellent drainage from below; this greatly aids convalescence, where the pelvic and abdominal structures have been extensively soiled with blood, which may have become infected by passage of germs from the bowel.

In cases of great shock, where the patient would probably die if an abdominal section were performed, we may control hemorrhage and establish drainage through an incision into Douglas' pouch, by bringing down the ruptured tube and applying a clamp over the bleeding point; this may be left in position, giving positive assurance that there will be no hemorrhage until the woman can be stimulated and gotten into a condition favorable for an abdominal section; it may be done without the administration of an anesthetic or greatly disturbing the woman. In fact, all operations for extra-uterine pregnancy before the end of the third month, where there is not great shock, may be performed so easily and so successfully that a description of methods is hardly necessary. This, however, is not true in cases that have continued to develop for several months or to term after rupture from the tube. In these cases, we would have no trouble were we able to remove the placenta and control hemorrhage. The dangers of sepsis and secondary hemorrhage are so great if the placenta be left, that we are justified in encountering the dangers of hemorrhage in efforts at its removal. If we attempt to separate the placental attachment without facilities to control the blood-vessels speedily, our patient may die of hemorrhage before we can reach the bleeding points; therefore it is best to have a large assortment of long and varied-shaped forceps, which may be applied at many points before the separation of the placenta is attempted.

If we wait to apply the forceps to all points after the separation the hemorrhage may so obscure the surface that we can not succeed. It is nearly impossible in these cases to use ligatures to an advantage before the placenta is separated, but they may be applied afterward when we have controlled hemorrhage by forceps, just as we do when we control hemorrhage by forceps in the removal of uterine myomata; for the large vessels will then have become greatly contracted. Firm gauze pressure may aid in controlling hemorrhage.

Of course, there can be no well-established technique that will apply to every case, because in one ectopic pregnancy that goes to term we may open directly into the sac cavity and not expose any intra-peritoneal structures; while in another the peritoneal cavity will have been opened and the placenta found attached so widely that it seems nearly impossible to separate it without fatal hemorrhage. Again, the attachment may be such that the placenta and membrane may be separated without causing profuse hemorrhage. If in any case the placenta can not be or is not removed, a large opening should be made into the pouch of Douglas so as to establish free drainage, and if possible the fetal sac should be sutured into the lowest part of the abdominal incision, thereby protecting the peritoneal cavity.

DISCUSSION.

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This was in a greater degree true of Dr. Horatio R. Storer of Boston. Educated in a most careful way, four years an inmate of the family of the immortal Simpson, and the editor of his works, he tried in vain to stem the tide of adverse popular medical opinion, and broken in health as a consequence, abandoned his profession. Yet these men made contributions to surgery which have rendered their names immortal. They placed upon a sure foundation the surgical removal of large uterine myomata, and Dr. Storer was the first deliberately to plan and execute the safe surgical cure of umbilical hernia. When this operation, now considered of so little danger, was first made known, the criticism and condemnation here was bitter and almost universal.

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In 1847, Prof. Charles D. Meigs, of Philadelphia, published a large volume upon, "Woman, Her Diseases be left, that we are justified in encountering the dangers of hemorrhage in efforts at its removal. If we attempt to separate the placental attachment without facilities to control the blood-vessels speedily, our patient may die of hemorrhage before we can reach the bleeding points; therefore it is best to have a large assortment of long and varied-shaped forceps, which may be applied at many points before the separation of the placenta is attempted.

If we wait to apply the forceps to all points after the separation the hemorrhage may so obscure the surface that we can not succeed. It is nearly impossible in these cases to use ligatures to an advantage before the placenta is separated, but they may be applied afterward when we have controlled hemorrhage by forceps, just as we do when we control hemorrhage by forceps in the removal of uterine myomata; for the large vessels will then have become greatly contracted. Firm gauze pressure may aid in controlling hemorrhage.

Of course, there can be no well-established technique that will apply to every case, because in one ectopic pregnancy that goes to term we may open directly into the sac cavity and not expose any intra-peritoneal structures; while in another the peritoneal cavity will have been opened and the placenta found attached so widely that it seems nearly impossible to separate it without fatal hemorrhage. Again, the attachment may be such that the placenta and membrane may be separated without causing profuse hemorrhage. If in any case the placenta can not be or is not removed, a large opening should be made into the pouch of Douglas so as to establish free drainage, and if possible the fetal sac should be sutured into the lowest part of the abdominal incision, thereby protecting the peritoneal cavity.

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In 1847, Prof. Charles D. Meigs, of Philadelphia, published a large volume upon, "Woman, Her Diseases and Remedies." This continued a text-book of recognized reference until after my graduation. His teaching is given (in the form of letters) to his class, and he discusses colloquially with his genial "Helen," in a very free way, of her supposed diseases and manifold sufferings. Very little of profit came to the student from its study, and it is now chiefly valuable as a standard by which to gauge the ignorance rather than the knowledge of woman's diseases half a century ago. It is said the good Doctor made simplicity of living a virtue and showed its benefit in a well-preserved physique. He commended walking as the exercise for all, even of the profession. One of his famous sayings reported is the following: "The doctor who drives one horse has weak legs, he who drives two has a weak head."

Surgery can never repay the indebtedness which it owes to Drs. John L. and Washington L. Atlee of Pennsylvania. They revived the operation for ovariotomy in 1843 and were the first in the history of medicine to remove successfully both ovaries at one operation. The first successful ovariotomy ever performed, as is well known, was by Dr. McDowell in 1809. Dr. McDowell operated thirteen times with eight recoveries. The next ovariotomist in America was Dr. Nathan Smith, then professor of surgery at Yale College. His operation was performed July 5, 1821. The third was Dr. A. G. Smith of Danville, Ky., who assisted Dr. McDowell in some of his operations. This was performed in May, 1823. The fourth was Dr. D. L. Rogers of New York, who operated in 1829.

In 1830, Dr. J. C. Warren of Boston reported the thirty-third case on record. He first tapped and two weeks after removed the ovarian tumor. The ligature slipped. "Owing to the shortness of the pedicle, the ligature partially slipped off as soon as the scirrhus was taken away, and though the vessels were secured as fast as possible, they were so numerous and large that the patient in a short time sank from loss of blood." Dr. Warren concludes his remarks on the case and the result of the operation in these words: "The event of this case has led me to decline repeating the operation, and I should advise others to decline it unless there was some peculiar insulation of the tumor, as when it forms a hernia. or when it has a very long and narrow pedicle."

Dr. J. Bellinger of Charleston, S. C., who attempted an ovariotomy in 1828, operated successfully in 1835. No other successful ovariotomy was performed until that of the Atlees above referred to. Dr. Bellinger reports his operation as follows: "Incision extended to the ensiform cartilage; the tumor was removed by cutting the round and broad ligaments. Two arteries of considerable size were tied with animal ligatures, both ends of which were cut off close to the knot; a tumor in the pelvis was formed by the uterus distended with a large quantity of dark watery fluid which escaped by a rent made by the finger through the posterior wall. The patient was still living and in good health, May, 1847; menstruation never returned."

Dr. Vangirard reported in 1847 a case which had been tapped fifty times in three and one-half years. *Ether inhaled;* recovery. Dr. Atlee in 1849, reported two cases; chloroform mixture given. In 1850 he reported a case very troublesome because of a forcing out of the intestines, owing to a state of catalepsy produced by the chloroform mixture. Dr. J. H. Bigelow in 1849 removed a cyst weighing eight pounds; recovery—the first case which I find of recovery in Boston.

Dr. Bellinger's case is especially worthy of note, because of the use of the animal ligature, cut short, and the pedicle dropped back into the abdomen. Others had used animal ligatures prior to this date, but the ligatures were usually left long and brought out through the abdominal wound, that they might be removed later.

It was thought at this time by the profession in general that the previous surgical experience did not warrant surgical intervention. On this account, it made it even more difficult to stem adverse criticism than that which befell Dr. McDowell. In the publication of his experience[1] Dr. Atlee wrote: "I pledge myself to the profession to treat this subject in all truth and candor; to falsify, omit, or withhold nothing; to write down errors, if such there be, in honesty and without fear, taking censure when deserved. In the decision of a matter of such weight to humanity, personal sacrifices ought to be utterly disregarded. If this operation is to be established, it must be on correct statements; if it fails on such testimony, it fails justly and forever. . . . Let the question therefore be met as it should be and its history be a record of truth." Dr. Atlee moved to Philadelphia, where he soon after performed his third operation, the first in the city, in March, 1849. The operation was denounced by the general profession, in the medical societies, and in the medical colleges. He was pointed out as a dangerous man. A celebrated professor, even in a published lecture, invoked the law to arrest him in the performance of the operation.

"The day before I operated upon my patient in Philadelphia, an eminent surgeon called upon her to assure her that she would certainly be dead in twenty-four hours after the operation. Twenty-four hours after the operation I requested him to visit her, and her condition was such that he could not believe she had been meddled with until I exposed the wound."

In 1852, the Northern Medical Association passed the following resolution: "That this Association, viewing the numerous fatal results ensuing upon ovariotomy and the many disasters arising from errors in diagnosis, unreservedly deprecates the frequent performance of this operation as detrimental to the best interests of science. and fraught with the most imminent hazard to life."

The following autumn, the same society reviewed the subject carefully and passed a resolution no less condemnatory.

Dr. Atlee was indefatigable in his researches upon the history of ovariotomy in every country and gathered a statistical table of 101 operations, which he published in April, 1845. In 1851, he published a new edition of his table, then containing 222 cases.[2]

There were in America 27 cases only. So slowly did ovariotomy find favor with the profession, because of the excessive mortality, that the total number of reported cases in the United States up to 1864 was only 117, of which nearly 60 per cent. recovered. Even as late as 1863, there are only three cases reported in that year, with two recoveries. From January, 1864, to October 10, 1871, the number rapidly increased to 622. Of this number, 246 cases, with 70 per cent. of recoveries. were operated upon by Dr. Atlee alone; 121 by Dr. Gilman Kimball, of Lowell, with 70+ per cent. of recoveries; 60 by Dr. A. Dunlap, of Ohio, with 80 per cent. recoveries; 28 by Dr. E. R. Peaslee, with 67+ per cent. of recoveries. Dunlap's cases show the highest percentage of recoveries. The total of the four operators give 455 cases, with an average of about 70 per cent. of recoveries. Total number of cases in the United States, 739.

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[1] American Journal of Science, April, 1845.

[2] Transactions of American Med. Assn., 1851.

The total number in Great Britain at the same date was 1006, the list being headed by Sir Spencer Wells with 440 cases, recoveries 74.54 per cent.; Charles Clay with 250 cases, recoveries 72+ per cent.; Thomas Keith 136 cases, recoveries 81+ per cent.; T. Baker Brown 120 cases, recoveries 70+ per cent.

In France up to 1867, there had been only 116 cases reported, with only 40.51 per cent. of recoveries. In Germany up to 1870, there were 180 cases, with 41.66 per cent. of recoveries.

The gravity of all these cases was greatly increased owing to the pathologic changes incurred by delay, as the rule then was not to attempt operation, because of the great fatality resulting from peritoneal injuries, until after twice tapping. Thus, extensive adhesions, reduction of vitality, etc., were the rule rather than the exception.

It is not my present purpose to follow the history of abdominal surgery beyond the advent of antiseptic teaching and practice. Owing to the indomitable heroism of the few already referred to, whose memory will be cherished, the battle over ovariotomy had been fought and won before our knowledge of wound infection had been placed upon a scientific basis. To a considerable degree this was also true, in favorable cases, of uterine tumors.

To Drs. Burnham and Kimball, of Lowell, belongs the undisputed honor of being the first deliberately to plan and successfully carry into execution that which is now justly considered one of the greatest triumphs of modern surgery—the comparatively safe removal of uterine myoma.

All along the lines, however, the details of operative measures were actively contested; the treatment of the pedicle, the closure of the wound, the use of drainage, the character of sutures, dressings, etc. It is true that the mortality was still large, which has been so extraordinarily lessened by modern aseptic methods, the chief of which has been the making and maintaining of a wound free from septic infection.

Our profession has been and is justly a very conservative one, and, as a rule, new teaching, no matter how scientific the demonstration, has ever encountered adverse criticism. When I was a pupil of Mr. Lister, in Edinburgh, in 1870, he had a following of scarcely a half dozen pupils, and not a single professor but looked upon his methods with distrust and criticism. My own was the first case of ovariotomy with successful issue in Cambridge, and this as late as 1872, and even this did not meet the approval of my seniors, who declared it unfortunate, lest a number of fatal cases should result from the overweening enthusiasm of a young devotee to a new faith. About this date I found it difficult to obtain the presence even of a physician at my first operation, deliberately planned for the cure of hernia, lest it might be construed into a quasi-approval of that which was necessarily looked upon as a most dangerous operation.

In 1880, when I exhibited to a medical society the specimen of my first resection of the pylorus for cancer, it was met with universal criticism, as beyond the pale of legitimate surgery. My first intercurrent operation for appendicitis was in December, 1886. This was upon Dr. S. N———, to whom was due, quite as much as to myself, the credit of working out the problem, with the deduction that the danger to life would be sufficiently less by operating between the attacks to warrant the operation upon an individual when in a fair state of health. The problem was then a new one and chanced to be the first operation of the kind reported. The danger was generally considered too great to warrant the approval of surgical intervention.

The removal of a biliary calculus from the common duct with immediate suture, followed by easy recovery, October 26, 1889, the first case of this character on record, was criticised as a surgical improbability, although attested by several reputable surgeons who assisted me in the operation. These instances are cited to show the difficulties encountered by pioneers in that which is now considered the every-day work of hundreds of surgeons. It is said that the adventurous innovator of to-day in new fields of research becomes the conservative of to-morrow. Different periods of life have doubtless much to do in bringing about such changes of opinion. However, it is wise to consider, in some directions at least, if the pendulum of surgical opinion may not have swung already too far away from the central truth. It may be well to inquire, if we have not too many surgeons, unless indeed they are better ones, and if the training and preparation for this special work should not be more thorough and critical, since the surgeon should be the good physician and something more. A special training in pathology, bacteriology, a familiarity with anatomy that must ever be an unfaltering guide, and in addition to all, should not the surgeon be the mechanic, artisan, and artist—rare gifts, especially molded to fitness by long years of training!

In conclusion, we may summarize the contribution of gynecology to surgery as primarily the entire domain of pelvic, abdominal, and intestinal surgery. Gynecology, which only a quarter of a century ago was looked upon with disfavor and criticism by surgeons who stigmatized it as the "art of puttering," has become the chief cornerstone in the new edifice dedicated to surgery. Its contributions indirectly benefit every unfortunate sufferer from accident or injury, until indeed it is itself lost in the common weal to humanity and bids fair in the future to be relegated to the past simply as a name, a sort of structural hypothesis, upon the scaffolding of which, one series of earnest workers labored, until they met and joined hands with other zealous rivals, in giving to the twentieth century the surgery of to-day, a sure Art, well builded upon a well-established science.

A CASE OF LEPROSY—A CASE OF MULTIPLE NEVUS PIGMENTOSUS.*

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ST. PAUL, MINN.

The following case was seen in consultation with Dr. E. Boeckmann, March 13, 1901. The patient, J. J., 20 years of age, was born in Minnesota and has never been out of the state. His father, mother, two sisters and one brother are living and well. The other brother, older than this patient, died in May, 1898, of leprosy, from which he had suffered for about eight years. In infancy this brother had been nursed by a woman who had two brothers, both of whom were lepers and were known to be such in that community. It should be stated that the father of my patient came from a leprous district in Norway forty years ago, but that there is no leprosy in the family history. The mother was born in Minnesota.

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* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Cutaneous Medicine and Surgery, and approved for publication by the Executive Committee of the Section: W. T. Corlett, L. Duncan Bulkley and W. L. Baum.

The patient presented the ordinary type of anesthetic leprosy, there being eruptions scattered about on different parts of the body. There was, however, a distinct tuber on the right wrist; there was marked thickening of the ulnar nerve on both sides, and numerous areas of marked anesthesia on different parts of the body. The patient had lost a great deal of hair and his eyebrows had nearly disappeared. He suffered from occasional attacks of fever and acute eruptions. A section cut from a nodule in the skin, which I have here for your inspection, shows numerous leprous bacilli. This case is probably an instance of the anesthetic form of leprosy, which, as is so commonly the case among the lepers in this part of the world at least, is becoming tuberous. I regret very much that I have not been able to present the patient.

My chief reason for reporting this case is that I desire to put it on record as the only case of leprosy known to have been born in the State of Minnesota, or indeed in this part of the country. You are all familiar with the statement, so frequently made, that all the cases of leprosy in the Northwest have had their origin in some leprous district of some other country, and that for some unexplained reason, the disease was never communicated to others here, although there has been abundant opportunity for such communication. This case puts the matter in a new light.

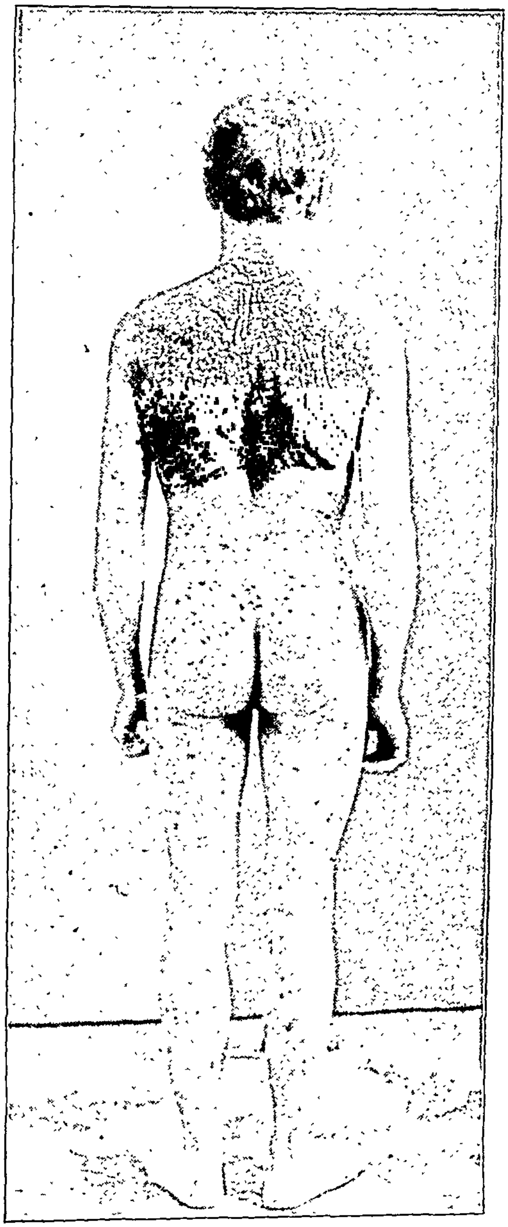
MULTIPLE NEVUS PIGMENTOSUS.

The history of this remarkable case may be told in a few words. N. G., aged 21, was born in Sweden; his family history is negative. He is a strong, well-developed young man, apparently healthy in all respects. The condition here presented existed at birth, and has not altered since, except that the large growth on the back has spread slowly during the last few years. There is a slight secretion from the deeper fissures of this growth and it has an offensive odor. With the exception of the large growth the moles are nearly all smooth and flat, with here and there a growth of hair, notably on the shoulders and right buttock. The question of malignancy must be answered by the future clinical history. The accompanying photograph portrays the appearance better than any description; hence, I shall attempt nothing further in that respect.

The *microscopic report* was made by Dr. J. C. Johnston,[1] from sections submitted taken from the large growth between the shoulders. Hematoxylin alone was used in staining.

Unna[2] has made a thorough investigation of these growths; so thorough, in fact, that it only remains for later investigators to confirm or disprove his findings on minor points. The tumor in question belongs to his class of "soft moles," which are carcinomata, and not endotheliomata, as claimed by Von Recklinghausen; these are developed, according to Cohnheim's theory, from epithelial cell nests, detached from the epidermis in fetal or early life. In many places in these sections connections can be traced between the cell masses and the covering epidermis, there being, apparently, no basement membrane.

The epithelium is not, as a rule, greatly thickened, although there is some increase in all its layers, but the rete pegs are enormously prolonged and form an anastomosing network. The basal layer is deeply pigmented in certain areas, however, not uniformly. In the meshes of the network and in the papillary body generally, are seen the rounded, snared-off masses of cells. Their borders are clearly demarcated, generally by connective tissue. The cells show oval, vesicular, deeply staining nuclei, their contours being made out with great difficulty. Further down in the cutis are seen columns of epithelial cells, oftenest horizontal, between the connective tissue bundles. The cells are closely packed; their nuclei are smaller, more elongated and less vesicular. More deeply, but still in the cutis, the cells are arranged in loose masses, more widely separated from each other, their outlines more clear and the nuclei larger than in any other situation. The appearances here strongly suggest a malignant carcinoma, except that there is no mitosis. Pigment is irregularly scattered through the cell masses and cords lying within and without the tumor elements. The appearance in the former case is often that of a nucleated clump of pigment granules. Vacuolation of the nucleus is frequently apparent, both in the new growth and in the epidermis.



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[1] Jour. Cutaneous and G.-U. Dis., March, 1899.

[2] Histopathology, p. 1129.

In the cutis the lymph spaces are enormously dilated, but there is no proliferation of the lining endothelium. There is considerable proliferation of connective tissue cells. Careful search failed to show any trace of coil-glands or ducts; here and there, however, attached by solid cords to the surface, were groups having the structure of sebaceous glands, evidently tumor cells pursuing their physiologic course. In this tumor there is both epithelioma and acanthosis, i, e., epithelial proliferation with and without fibrillation, the latter, of course, occurring in the epidermic meshwork.

LUPUS VULGARIS?

I will ask you to help me make a diagnosis in the following case. The patient is 27 years of age, apparently perfectly sound, but for the cutaneous trouble, in physique is almost a giant; he is an operator with a publishing company here. At the age of 3 he began to have ulcers and sores on his body, which have never healed. They have pursued a varying course, sometimes the ulceration has been quite deep. When I first saw him it was for an ulceration on the wrist. There was not very much discharge, but there were two or three jelly-like nodules, which resembled lupus vulgaris. Some nine years ago this young man was treated with tuberculin and the eruption entirely disappeared, but it returned in about six weeks. My first thought, toward which I am still inclined, was, that this is a case of lupus vulgaris and lupus erythematous combined. I want you to note particularly the character of the scar on the wrist which, as you observe, is very soft and pliable. This was the result of treatment by superheated air after the Hollander method.

DISCUSSION.

Dr. William Allen Pusey, Chicago—It seems to me this is a case of lupus vulgaris. Dr. Foster is in a better position to offer an opinion about the erythematous element than we are.

In connection with the leper case, I know of one interesting case of leprosy, in regard to development. It was a gentleman in good position who had lived in Chicago most of his life. He lived in New Orleans for two years, under good hygienic conditions. I saw the case several years ago with a typical tubercle of leprosy on his face. After that he went to Dr. Zeisler. He had lived in Illinois all his life except the two years he spent in Louisiana ten years ago.

Dr. Joseph Zeisler, Chicago—I believe with Dr. Foster that this is a very remarkable case. In my recollection of lupus I fail to remember a case where the disease was so remarkably free. It is unique to see a primary affection of the arm. Like Dr. Pusey I am not in a condition to see the erythematous element at present; the lesions are typical lupus.

Dr. Foster—How about the scar?

Dr. Zeisler—I should say it was an unusually excellent scar for lupus.

Dr. Foster—My diagnosis of erythema was from the scar.

Dr. Zeisler—As to treatment, I should use surgical means—cauterize each individual lesion.

Dr. Douglass W. Montgomery, San Francisco—This I believe to be a case of lupus vulgaris. In regard to the nevus I should think that a pigmented sarcoma had developed from the nevus.

The case of leprosy is to me the most interesting of the three. The development of leprosy in this country is quite an important question, for it seems to be capable of developing over quite a large section of the country. We have always with us in California, and in San Francisco particularly, a great number of lepers, who are almost all immigrants, however, and it is very rare to find an instance of leprosy that has developed on the Pacific Coast. I have had two cases that could be said to have developed on what is called the Pacific Coast. A third case that I thought at first had developed there shows the difficulty of obtaining accurate histories. The patient was a physician, a woman, who had typical leprosy. She steadily denied ever having lived in what is called a leprous country and said she had lived in California only, and California can not be called a leper country. That remained as a fixture in my history of the case until some years later I found that her father had lived in Mexico and that she had been brought up there. Here was a patient, who was a physician, who knew about leprosy, who had studied her own case and knew the importance of the history, and yet told me that she had always lived in California and never admitted having lived in a leper country.

Of the two instances where I found leprosy to develop on the Pacific Coast, one was a man from Vermont or Massachusetts who had never been out of the United States except once for a few hours on the Canada Southern railway going West, the only part of that country he had ever visited. It was a long time after first getting his history that I found he had lived in a Chinese railroad camp, and I have no doubt that he then contracted the disease. Another instance was a woman born in Ireland. She came to New York and afterwards to San Francisco. Her husband was born in Ireland, had lived in Ireland, Boston and San Francisco and nowhere else. Their children were all born in San Francisco. The woman developed eruptions and when I saw her she was in the full bloom of tubercular leprosy. She denied any intercourse with lepers and denied knowing anything about leprosy, and denied association with Chinese. I found out afterwards that she had had for years in her house, as a boarder, a well-known leper, an American who had acquired leprosy in Hawaii. These instances show the difficulty of getting at the source of contagion. These are the only instances I have ever found of leprosy developing on the Pacific Coast, but that it does develop there is a very important finding.

Dr. W. T. Corlett, Cleveland—In regard to the first case, I agree with those who consider it a peculiar case of lupus vulgaris. I do not, however, see any erythematous element in it. The scar is very peculiar. I have in mind a case of symmetrically distributed eruption leaving a scar similar to this, which was the result of syphilis.

In regard to the nevus, it is a very striking case and I quite agree with Dr. Foster that it is at the present time a case of very marked nevus which will probably result in sarcomatous changes later on.

In regard to the case of leprosy reported by Dr. Foster, about three or four years ago there was reported before this Association two cases of leprosy occurring in the vicinity of Columbus, Ohio. I think in Dr. Morrow's article in the "Twentieth Century" these cases are regarded as leprosy. I have seen the cases and after careful consideration must differ from his diagnosis. If they be cases of leprosy they are ones which have developed in the State of Ohio, the patients never having left the state. The father had some mysterious eruption, which seems to give more direct history of syphilis than anything else. The only time he left the State of Ohio was during the war of the rebellion, when he was in the Southern states. I do not report these as cases of leprosy, for I think they are a peculiar form of syringomyelia, closely simulating the lesions of lepra.

Dr. L. Duncan Bulkley, New York City—I dislike to connect lupus vulgaris and lupus erythematosis in any way; for, while the nodules of lupus vulgaris have sometimes developed in the lesions of lupus erythematosis, there is in reality no connection or relation between the two diseases. In the present instance I should regard the whole process as that of lupus vulgaris, and think the scarring is quite compatible with this diagnosis; there are certainly some quite characteristic nodules of lupus vulgaris here and there.

In regard to the nevus, I quite agree that there is danger of the development of sarcoma. I believe that this will occur if he lives long enough.

As to the question of leprosy developing outside of leprous countries, there are enough cases now known to have originated in the United States to make it certain that this may happen. The subject was pretty well thrashed out last year at Atlantic City. I have seen at least two such sporadic cases in New York City, and others have seen similar cases, where the patient had not been in a leprous country and no source of infection could be traced; these cases are, of course, very rare.

Dr. Schuler, Pittsburg—I only wish to speak of the migration of patients with leprosy. A case came under my care some years ago, of which I was perfectly ignorant at the time, but after looking it over I made up my mind that it was a case of tubercular leprosy. As soon as I intimated to the lady what was the matter with her she immediately left me and put herself in the hands of some other person, and continued passing from one to another until she landed in Johns Hopkins Hospital, where she died about two years ago. When I was trying to elucidate where she had lived and how she came by the leprosy, she denied ever having been out of the states of Pennsylvania and Ohio, but when she came near to death she told the rest of her history; that she had spent several years in the West Indies, and no doubt from that source she contracted her leprosy. I wanted to speak of the difficulty of getting a truthful history that you can trace back to a possible origin.

Dr. William Frick, Kansas City—All seem to agree that this is a case of lupus vulgaris, and I did hope that the gentlemen would speak of the treatment by *x*-rays. I have had a case which was treated that way and with marked benefit.

I believe I have at present a case of leprosy in Kansas City and it has developed in the United States. The woman was born in Ireland, came very early to the United States, went around from one place to another, including Vicksburg, and for several years has been in Kansas City. She has had the disease for five years. It is principally in the face, with some nodules on the back. I have not been able to corroborate the diagnosis, but the clinical appearance seems to be that of tubercular leprosy.

Dr. Burnside Foster, in reply—I have been well aware of the fact that this was a case of lupus vulgaris, but not a typical one; and I had thought, on account of the appearance presented by the scars, that this might possibly be one of those cases which we sometimes see where lupus vulgaris and lupus erythematosus co-existed.

REPORT OF A CASE OF EPIDERMOLYSIS BULLOSA HEREDITARIA.[*]

L. E. SCHMIDT, M.S., M.D.
CHICAGO.

On account of the comparative infrequency of these cases, but not for any unusual circumstances in connection with it, the case is reported. W. Beatty, in 1897, gave a most complete review of the cases and literature up to that time. Rona, in 1899, was able to collect but 18 cases in the literature.

As in one case of Dr. Elliot, we find from the history that apparently this affection originated in the patient and was not inherited. In regard to this we know that there must be a starting point, and should there not be any hereditary influence in this case we can not point out why the boy is affected, as the clinical history does not differ from any one of those where we know an hereditary influence is present. Nevertheless, some authorities persist in calling it an hereditary disease.

In my case from its inception the second week after birth the parents believed that traumatism played a rôle in the causation of the bullæ. Nevertheless, after the greatest of care, but *especially after the boy commenced* to walk, the efflorescences continued to appear. The course in all these years has been about the same, neither does it vary as to the time of year.

As has been noticed by Elliot and others, the lesions do not leave any pigmentation, as we find so commonly among bullous eruptions. In these cases epidermal cysts, especially noted by Rona, are frequently seen after a bulla has healed, and these in turn quickly disappear and leave but a smooth, glossy, bright-red surface with the creases of the skin absent.

Edwin B.; age 9 years; presented himself for examination April 15, 1899.

Anamnesis.—Both the father and mother denied any hereditary nervous or blood diseases. All that could be ascertained was that their relatives had never been affected by any other than the ordinary diseases. The father is the third in a family of five, and was married at the age of 24 years. The mother is the fourth in a family of seven, and was married at the age of 23 years.

At present (June 1, 1901), they have been married thirteen years, and previously and since then have never been treated for any disease. Both parents regard themselves as perfectly well, although the mother for some years past has irregularities with her menstruations. Beyond this, nothing further can be elicited.

Two healthy boys, the second twenty-three months previous to the one in view, were born. This one was in all respects a normal labor, no forceps or other instrumentation required. Two years later, without any apparent cause, a miscarriage in the beginning of the fourth month occurred. The fourth and last boy was born four years ago. The three other boys seem to be perfectly well. They have had the ordinary diseases of childhood.

The boy under consideration was under 9 years of age; he was never seriously sick, although had measles and whooping-cough some years ago. At time of birth the patient was regarded as normal. No eruption on skin was noticed. Not until about the end of the second week, then commencing in the soles of the feet, just around the heels especially of both feet "water blisters," about the size of a split-pea, made their appearance. These were opened and treated with dusting powder. About the third month, small, regular, from pinhead to size of Lima bean, blisters appeared at irregular intervals on the dorsal surface of the hands and fingers. When he became old enough to walk, which was the usual time, bullæ up to the size of a large thumb-nail began to show themselves around the anterior surface of the knee, around the ankles, apparently especially over tendo Achilles. Beginning at the time, hemp-sized and small vesicles appeared on the dorsal surface of toes and both feet. Likewise bullæ about the elbow, especially over extensor surfaces, commenced to appear.

Apparently all these became more exaggerated since patient is able to walk and since he is open to traumatism; that is, these blisters came with more frequency, and usually became of quite large size. His mother states that the larger number of these blisters broke usually shortly after their appearance, and remaining contents would dry and in several days only the outer border of a blister would remain. The contents were usually clear, light yellow in color and slightly tenacious. But rarely would the contents become turbid or milky in appearance. If so, the parts became painful and swollen. It is only during the past four years that the contents of some bullæ occasionally become dark, bluish-purple in color. Both the nails of fingers and toes are affected and have been so as long as the mother can recall. Occasionally small blisters appeared in the external ears.

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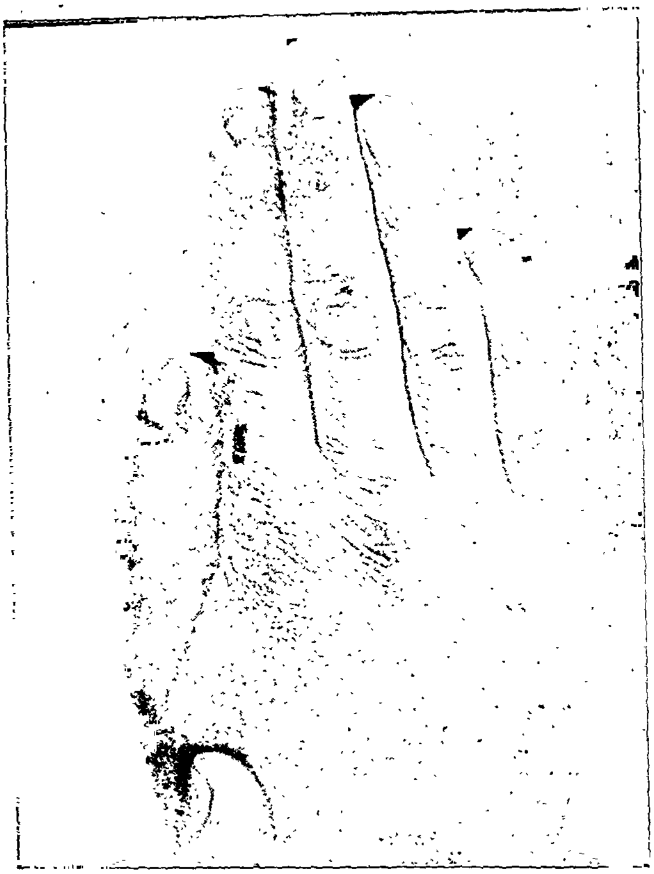
[*] Read at the Fifty-second Annual Meeting of the American Medical Association, in the *Section on* Cutaneous Medicine and Surgery, and approved for publication by the Executive Committee of the *Section*: W. T. Corlett, L. Duncan Bulkley and W. L. Baum.

I have had the boy under observation for over two years. During this time repeated acute attacks of inguinal and axillary adenitis occurred. After a bulla became infected the corresponding glands would often become painful and greatly swollen almost within twenty-four hours. On physical examination of heart I have occasionally heard a hemic murmur. During this time he has had a bronchitis.

One year ago he complained of severe earache. Dr. Holinger examined him and found a small vesicle at border of membrane. As soon as this disappeared the pain ceased.



May 10, 1901.

During this time he occasionally had some unusual appearances in his case. Several times areas the size of silver 50-cent pieces would become red and itchy, and in a few days scaly. These would be over the lower dorsal vertebræ, exactly in the median line. Besides small vesicles, which would become hemorrhagic, appeared in mucous membrane of tongue and buccal surfaces. Patient would not notice them until he was made aware of their presence.

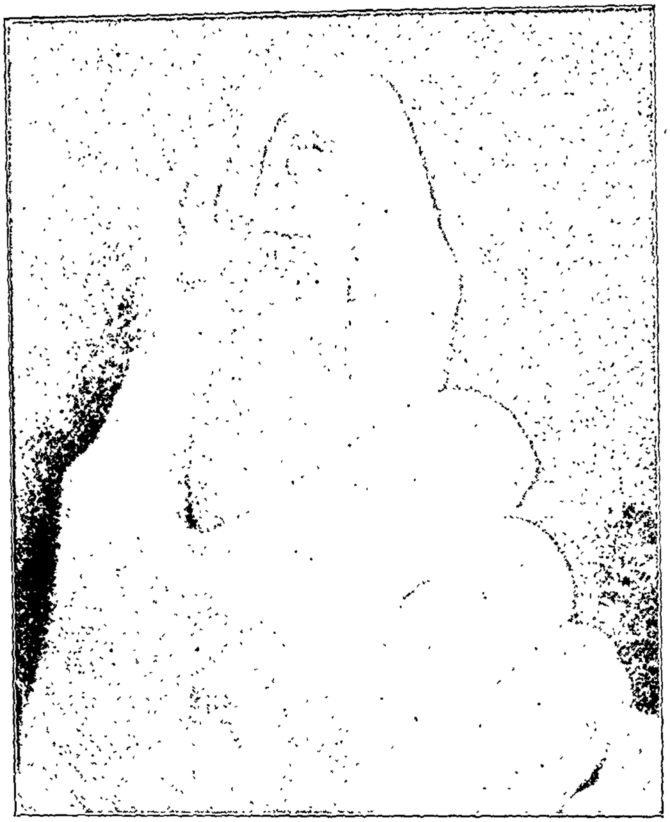
He can play baseball when hands are in fair condition without causing new blisters to arise. Whenever a new blister does appear he always claims it follows a blow or fall.

His mother states that he has always been peculiar in regard to his diet. He refuses to take almost all vegetables and fruit.

During this entire time I have given patient tonics of all kinds, especially for long periods some form of iron; now for some time cod-liver oil. The blebs, as a rule, have been treated by allowing them to remain closed, or, if very large, by opening and dressing with some inert antiseptic powder or salves according to the needs. The infected and hemorrhagic bullæ were treated antiseptically. The former often required moist dressing in order to give relief.

For four weeks I have had the patient in the Alexian Brothers' Hospital under close observation. During this time the hands and feet were wrapped in inert powder and absorbent cotton. Patient was not allowed out of bed and the hands could not be used; was dressed daily. With every precaution so that the affected parts were well protected and so they could not be used, the bullæ appeared with apparently the same regularity as if this care had not been taken. The acute swelling of the glands was treated with unguentum, Credé, and in no case did suppuration occur.

April 25, 1899: Blood examination showed hemoglobin, 74 per cent.; leucocyte count gave polymorphonuclear, 73 per cent.; large mononuclear, 6 per cent.; small mononuclear, 18.5 per cent.; eosinophile, 2.5 per cent.



May 15, 1901.

Nov. 10, 1899: A bleb, irregular in shape, about size of a 25-cent piece, completely full, surrounded by a red zone, located on palm of hand. Cleansed and surface made aseptic and sterilized needle attached to Luer syringe was used to aspirate. This turbid thick and grayish colored fluid was transplanted on the ordinary media. Typical growths of the *staphylococcus pyogenes albus* appeared.

March 6, 1901: Patient returned with a large hemorrhagic bleb at the base of the right thumb and palm of the hand, said to have followed a fall upon his hand. The bleb was opened under aseptic precautions and 9 c.c. of hemorrhagic fluid withdrawn. It was centrifugalized and slides made from the sediment stained with methylene blue and Ehrlich's triple-stain. Cultures were made from the freshly withdrawn fluid and also from the aseptically centrifugalized.

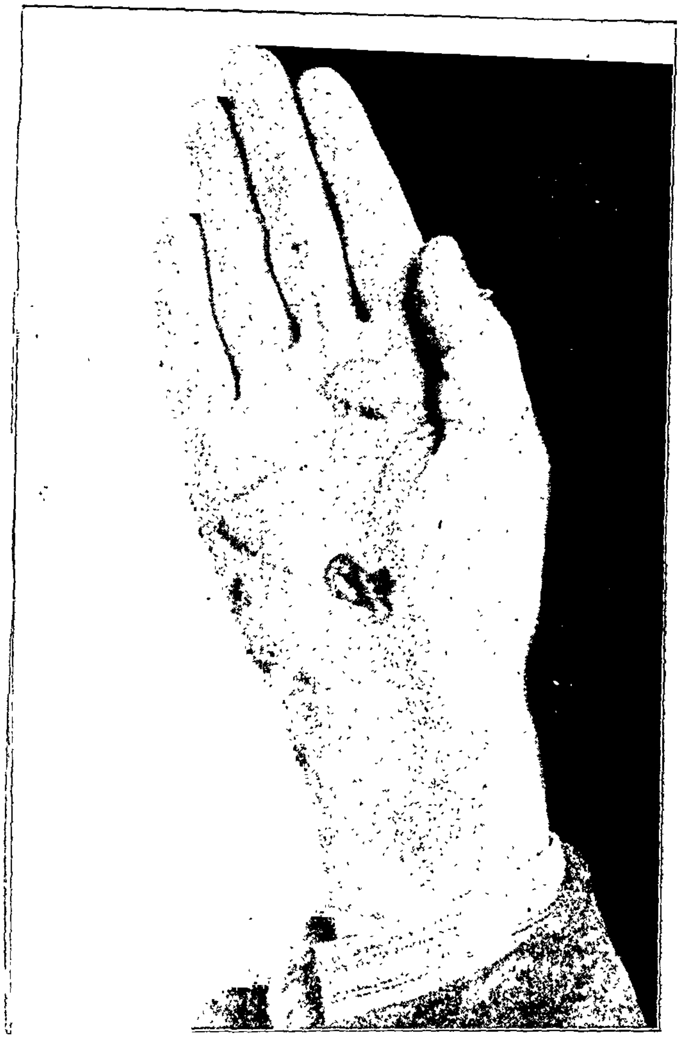
Just below the right patella was another large bulla which was treated in an exactly similar way. The contents were not hemorrhagic, but were perfectly clear.

Four cover-glass stained specimens from sediment of the hemorrhagic fluid showed numerous red blood corpuscles, a few leucocytes, two of which were of the eosinophile variety. No growths on any of the media after 72 hours.

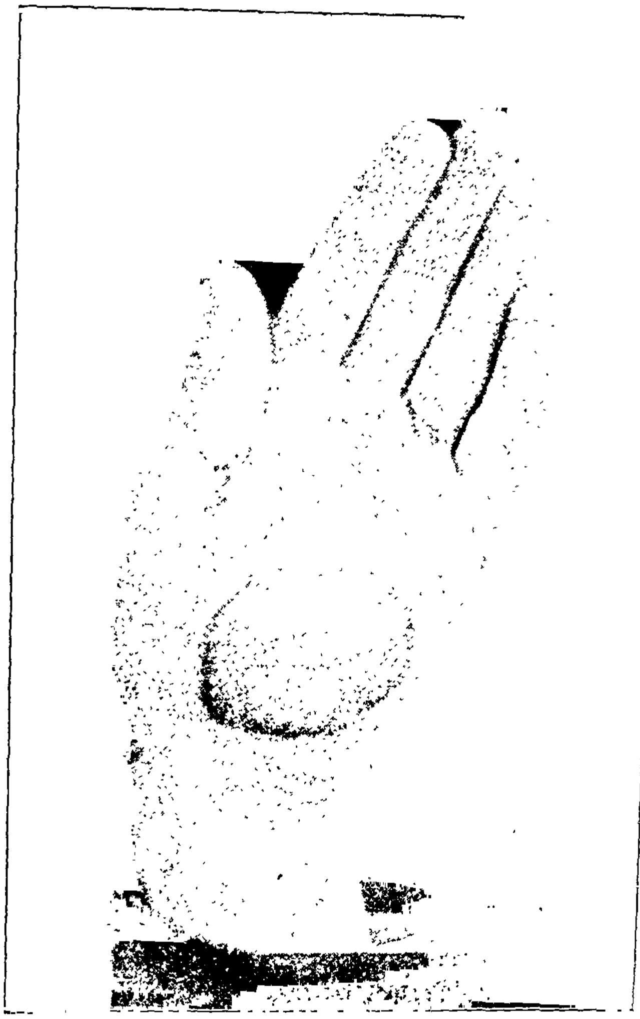
March 27, 1901: Since the preceding visit he has had numerous bullæ on the elbows, forearms and hands, and also on toes and about the ankles and knees. Some of those present are hemorrhagic and others filled with clear fluid. One bulla over the right knee was filled with a turbid fluid. This was aseptically treated and transplantations on ordinary media were made. The staphylococcus pyogenes albus was present in all tubes.

Blood taken from ear showed 71 per cent. of hemoglobin. The leucocyte count showed: Polymorphonuclear, 74 per cent.; large mononuclear, 7 per cent.; small mononuclear, 16 per cent.; eosinophiles, 3 per cent.

April 5, 1901: The condition of patient about the same. Bullæ have come and gone. The contents of several were again examined microscopically. Numerous leucocytes were present and the large number showed no abnormal conditions, but they varied from this to an advanced stage of degeneration. Some were vacuolated and had fragmented nuclei. The red cells appeared smaller than those from the general circulation. Besides, transplantations were made, all without showing any growth.



May 23, 1901.



May 23, 1901.

Analysis showed the urine clear, acid, with sp. gr. 1021; no albumin; no sugar; trace of indican; Diazo-reaction negative; urea, 1.7 per cent.; microscopic examination was negative.

During the entire time that I have had the patient under observation I have made repeated examinations of blood and contents of the various kinds of blebs, and all with the same findings. I could see no change in the course, that is, no decrease or increase in the number of blebs during the different seasons of the year. All the functions of the body seemed to be normal. The skin appeared to act freely at all times, and at no time did he complain of excessive sweating of any particular part. Bulla filled with clear fluid, size of a split pea, located about left elbow, involving an area that had never been previously affected, was removed with ethyl chlorid, incising one-eighth of an inch from the efflorescence. Another, considerably larger, filled with hemorrhagic fluid from about the wrist removed under cocain infiltrations. Besides this other parts, including the epidermal cysts, were removed without any anesthesia. All these specimens were treated alike, hardened in weak, then absolute alcohol, mostly all prepared by the celloidin method, but some were mounted in paraffin. The ordinary staining methods were used and Zeiss microscope and lens used for their examination.

Repeated blood examination showed a variation of hemoglobin from 71 to 83 per cent., going up and down in percentage strength. In the leucocyte count we also see variations: Polymorphonuclear, 73 to 75 per cent.; large mononuclear, 5 to 6.5 per cent.; small monuclear, 16 to 18.5 per cent.; eosinophile, 2 to 3 per cent. Continued bacteriological examination of the contents of the clear and also of the hemorrhagic bullæ showed absence of all bacteria. In those that were infected I have found the staphylococcus pyogenes albus.

Centrifugalizing the contents of hemorrhagic bullæ, all elements of the blood have been found. The larger number of leucocytes showed degenerative processes. Some were vacuolated and also had fragmented nuclei. The red cells appeared smaller than those of the general circulation.

Urinary examinations were negative to all pathological conditions.

For histological study excisions from healthy to frequently affected parts were examined.

HISTOPATHOLOGY.

In the strata spinosum and strata basale in all the specimens examined we find marked changes. Practically the adjacent cells of these layers show varying cellular destruction. Cells adjoining each other often show great contrast; one may be scarcely involved and the other may be the seat of greatest degeneration. This change involved the cell and its contents, yet no definite relation from below upward could be noticed, nevertheless we see that in the interpapillary changes we find the greatest destruction. In examining a bulla we can see how these affected cells, for the greater part, form the outer wall of the bulla, but few cells remain attached to the papillæ, and these, for the most part, show but little degenerative changes.

At a point where the layers of the bullæ again come together these changes were noticed. In some sections the process apparently stopped suddenly and in others the changes in the cells gradually changed to the normal condition.

The contents of the bullæ showed differences. In some, fibrinization had occurred—in those of several days' standing, also in those that were sanguinous. For the greater part the leucocytes that were present had undergone degenerative changes.

The greater number of blood-vessels showed dilatation, and in addition an infiltration about the same. The character of the latter were such that they were most markedly present in the older lesions and scarcely, or not at all to be noticed in lesions that were excised from areas that had never been previously affected.

In all we find a more or less serous transudate about the immediately affected parts. Whenever this fluid reaches these weakened areas of epithelial cells we get a separation of the same, and is the beginning of a bulla. It would seem as if this disease is non-inflammatory, only becoming so when it has reached the chronic state.

What the primary cause for the degenerative changes in the basal layer and the consecutive flow of serum is we can not explain. It must be some peculiar condition of the skin inherent in these unfortunate individuals.

Status Praesens.—Patient is of average size, although muscular development apparently below average. His general health appears to be good. Skin is somewhat flabby and general color seems to be slightly pale. He exercises the same as his playmates, but he is easily hurt, i. e., blebs arise and give cause for pain, especially if they become infected. In his school work he is as far advanced as those of his age. His skin is active, perspires freely, and apparently not unusually from any special area.

Irregularly distributed over the surface of tongue, more towards the median line and extending posteriorly to the circumvallate papillæ, from pinhead to one-half hemp-seed sized vesicles, some filled with a clear and others with hemorrhagic fluid. A few of them are so situated that the teeth could not have caused any traumatism. On the buccal mucous membrane on a level where the teeth touch, and opposite decayed teeth, are elongated vesicles filled with hemorrhagic fluid. About these parts a light leukoplakia exists, showing that possibly similar eruptions have preceded it.

On the lower lip, just to the right of the median line, the signs of an old 5-cent piece sized bulla partly extending over the skin.

On the tips of both ears irregular in outline, the border raised and represented by an epithelial layer passing into the normal *niveau*. Within this outline the skin is of a slightly redder hue. Within can be seen some parts that have apparently not been affected. These parts as well as all the others are normal to the different sensations.

Exactly over the tenth dorsal spinous process a perfectly round flushed area, silver-dollar in size. It has given him a slight sensation of warmth and itchiness. Over the upper lumbar vertebræ and in the median line an area somewhat smaller in size, color not quite so bright and the surface covered with very minute scales. This has been present some ten days. These have never reached the stage of bullæ, nor have any bullæ ever been noticed on the back.

Thumb-nail of right hand is about to become detached. It is raised, especially at base, and here, too, are transverse striations. The whole is very opaque and slightly movable. On raising a very distorted nail, with rough surface and with no free edge, is to be made out. On the flexor surface over the second phalanx a 10-cent piece sized bulla filled with clear fluid. About the nail and extending over the greater part of the dorsal surface of thumb, is scaly and of a dark-red color.

Now, over the metacarpal-phalangeal joints a few small vesicles. Interspersed we find pinhead sized white-capped elevations or epidermal cysts, arranged apparently usually in circles, which probably correspond to the outline of some previous existing bullæ.

The entire palm of hand covered with bullous eruptions, several bulla having come together. Contents is dark-purplish in color. About the wrist and extending partly up the extensor surface of forearm a similar appearance to that over the dorsal surface of the hand. Over the extensor surface of the elbow is a bulla one and one-half inches in diameter, comparatively well filled, slightly flabby with clear, semi-fluid liquid.

The nails of the thumb, middle and small finger are similarly affected as on the right side, except that a whitlow exists about the index finger-nail, it having followed a bulla. The palm of hand and dorsum as well as wrists and elbow showed a few bullæ, epidermal cysts and also red and scaly patches.

Nails of toes of right foot are all irregular, small, surface rough and apparently poorly nourished. Over dorsal surfaces of all the toes a reddish scaly condition and a few small vesicles present; similarly on the toes of left side. Never any bullæ on soles of feet, only occasionally on the dorsal surfaces, consequently only normal skin. About the malleoli and over the lower part of the tendo Achilles we find a few blebs and remains of old ones. No signs over tibiæ of any previous affections, but at present over both knee caps, palm-sized, flabby bullæ. About these scaly and discolored skin.

The hands show no signs of any cyanosis or edema. The shape appears to be normal, except when bullæ are present. The palms and dorsal creases are present when not temporarily affected by bullæ. Especially on the extensor surfaces of the extremities where bullous eruptions have frequently existed we find the skin glossy, tense, and the normal striæ of the skin lost or all the appearances of atrophy present. In these areas we find these epidermic cysts. These apparently go and come without leaving any permanent macroscopic changes.

I have attempted with heat, chemicals, and mechanical means to cause bullæ, but without avail. A slight redness would appear, but only of passing moment.

Of late there seems to be a tendency among some authorities, among whom we find Hallopeau, to bring all these cases under one class, yet to recognize different varieties. All varieties have some things in common. We find, 1, that shortly after birth or usually at latest in early youth, there is a tendency for traumatic bullous eruptions; 2, that similar areas are affected; 3, that it is hereditary; 4, that the general health is intact; 5, that the course is chronic and remains uninfluenced by therapy.

Now, the dystrophic form of Hallopeau includes the case which I report. Because, in addition, it has consecutive atrophy of the skin, epidermal cysts and distortion of the nails. Those cases that belong to the simple variety can not have any one of these changes present.

That these types exist we must admit. Certainly the clinical appearances are very marked. Without doubt these differences are so great that we must admit of the possibility of varieties. But it is asked: Why make such classifications? Have we not various diseases in which one or more clinical symptoms are absent and yet call one and all the same? No two cases of different types in the same family have yet been reported. This would almost certainly be a connecting link between the two and to some extent clear the question.

I think that we are still in doubt, and that for the present it will be best not to classify all under one and the same disease.

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DISCUSSION.

DR. F. H. MONTGOMERY, *Chicago*—I am *only* sorry Dr. Schmidt can not show the case here. Those of us who have been fortunate enough to see this case have no doubt regarding the correctness of Dr. Schmidt's diagnosis.

DR. M. L. HEIDINGSFELD, *Cincinnati*—The feature which has impressed me most strongly in Dr. Schmidt's interesting paper, is the low percentage of eosinophilia, less than 2 per cent., if I remember rightly. This corresponds to the recent investigations of Bettmann of Heidelberg, who has found an exceedingly low percentage of eosinophilia in epidermolysis bullosa, which is in direct contrast with nearly all other forms of bullous eruption, and what is most interesting, is also in direct contrast with the investigations of nearly all other writers on epidermolysis bullosa, notably with Columbini, who claims an eosinophilia of 14 per cent.

The nature of the bullæ in this disease is also a matter of peculiar interest. It has been noted that sinapisms, in the form of mustard plasters, Spanish-fly, etc., when applied over the predisposed pathological areas, are unattended by vesication or even redness, while on the other hand, these symptoms are promptly induced over normal tissues elsewhere, which from the very nature of the disease, is the converse of the anticipated. Subcutaneous injection of normal salt solution, over the pathological areas, has been followed by the formation of bullæ which have the same appearance and pursue the same course, as those of spontaneous nature. From this, the deduction has been drawn, that the essential factor underlying this peculiar condition, is an undue relaxation of the areolar connective tissue, which readily permits and favorably prolongs an exudation.

DR. LOUIS E. SCHMIDT, *in reply*—This case has been different from the cases reported in the literature. I know in regard to some of the findings, especially as far as being able to raise bullæ by artificial means and in blood examinations, they differ very markedly from some of the authorities. The microscopic findings are practically the same as those of Elliot.

New York State Insane.—Inequalities in county statistics of the insane are pointed out by the lay press without assigning any causes for the discrepancies. Thus Ontario county, with 49,000 inhabitants, has 185 insane, while Clinton, with 47,000, has but 88. Rensselaer, with 121,000, has 527 insane, while Oneida, with 133,000, has but 438. Ulster, with 88,000, has 265 insane, while Duchess, with 81,000, has but 360, and St. Lawrence, with 89,000, has 209. Orange county, with 103,000, has 357 insane, while Westchester, with practically the same population as Orange, has 500 insane.

PROTRACTED INFLUENZAL PNEUMONIA IN INFANCY.*

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While no period of life is exempt from influenza, it has been observed, during the pandemics of grip that have encircled the world, that infants are in a high degree immune from this scourge. During the recent epidemic of December and January, 1900 and 1901, I had under my observation, at the one time and in the same institution, four infants suffering from protracted pneumonia of influenzal origin, which, I trust, are of sufficient interest to present their histories and exhibit some pathologic specimens.

It is not my wish to convey the impression that grip in infants usually runs such a protracted course as the cases I present. During this period of life, grip is as protean in all its characteristics as in other life epochs. None the less the simultaneous occurrence of four cases in an institution that shelters sixty to seventy-five babies argues for the great frequency of severe and protracted forms, if infants be afflicted with influenza.

Etiology.—These four infants were fed exclusively on artificial food at the time they contracted the grip, and two of them had been nourished in this manner since birth. This is in accord with the observation that nursing children are almost absolutely immune, even though their mothers be seriously stricken with the grip. This immunity is explained by assuming that a potent antitoxin is eliminated in the maternal milk. Infants artificially fed are more susceptible than babies at their mother's breast, but are less susceptible than adults. Comby estimated that the morbidity among children in Paris during the pandemic of 1889 and 1890, was 40 per cent., and among adults was 60 per cent. We may state that the influenzal sick-rate, which is nil in young infants, progresses and regularly increases up to adult life. The youngest child that Comby reports with the grip was 17 days old, and he saw three nurslings contract the grip while nursing their sick mothers. This latter observation is quite exceptional. Relapses among children are not rare, but second attacks, during the same epidemic, are exceptional. The contagiousness of influenza is very great, and, particularly in institutions caring for a number of children, the afflicted infants should be isolated.

Symptomatology.—The onset, in these cases of protracted grip-pneumonia, was rather precipitate, and presented the clinic picture of a more or less severe gastrointestinal infection, to which, in a few days, symptoms of involvement of the respiratory tract were added. Convulsions were not present, neither were there any pronounced nervous symptoms, such as stupor, chill, etc., though some irritability or restlessness was early present.

Usually the first symptoms observed would be that the child refused its food, or, if it had taken some, would vomit. It would be cross and fretful, would have a high fever, the breathing would become fast, then hurried and jerky. Cough, at first short and occupying a single expiration, would increase in intensity until it might be paroxysmal and continuous as in pertussis. The bowels were usually constipated and a considerable accumulation of gas in the stomach and intestines was frequent. The tongue usually was red and dry or coated with a moist whitish fur, and the pharynx mildly injected.

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* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Diseases of Children, and approved for publication by the Executive Committee of the Section: H. E. Tuley, Edwin Rosenthal and Samuel W. Kelley.

The temperature was elevated to a high degree, even early in the disease, and was distinctly irregular and intermittent, pursuing no definite cycle. One of the curves in particular resembles that of a pus infection. This irregularity and intermittency is intensely characteristic of influenzal infection and is in marked contrast to the pulmonary infection with the pneumococcus. The remissions of temperature may resemble the irregular and inverse type, as observed in tuberculosis, or may exhibit such a periodicity as is observed in malaria, and these resemblances are still further approximated by the frequent concomitants of drenching perspiration. The daily difference between maximum and minimum temperature, as exhibited in these charts, is very great, and differs very much from that observed in the vulgar gastro-intestinal infections. It appears to me that these characteristics of the temperature curve, sudden onset, great height, irregularity, and great daily difference are rarely exhibited in other infections in infancy. Hyperpyrexia was several times observed, but was well borne by these infants.

The earliest symptom of respiratory involvement was an acceleration of breathing. The breathing was continuously short, shallow and fast approximating 30 to 40 respirations a minute, with paroxysms when the rapidity would excel 60 to 80 a minute. These paroxysms would continue from a few minutes to an hour, and would be accompanied by a severe degree of cyanosis. More or less coryza was present in all of the cases, while in two cases the nares became intensely inflamed; in these two there was an extension of the inflammation to the middle ear, with rupture of the drum membrane and discharge of muco-pus from the external ear.

Cough was present, but not early. It was sometimes paroxysmal and explosive, suggesting the cough of pertussis. As is the rule in infancy, there was little sputum raised with it and we were content to examine what could be obtained, during a paroxysm of coughing, by placing the infant's face downward and gently slapping it on the back, or removing the mucus from the mouth with the finger. In one case we obtained some sputum by means of the stomach tube that was introduced because of an accompanying gastric disorder. At no time was the sputum rusty or even blood-tinged, but usually consisted of a thick, tenacious, glairy, transparent mucus. The sputum was obtained from all four cases and was examined particularly for the influenza and tubercle bacillus. Smears were made on glass slides and the stains usually employed for tuberculosis were used, but in none of the cases were tubercle bacilli found. For influenza, a weak carbol-fuchsin, or hot, methyl-blue solutions were used and cultures were made on hemoglobin blood serum. Influenza bacilli were present in all cases, a few times, in what seemed to be pure cultures, but usually associated with other bacteria.

The pneumonia was clinically lobar. A large part of one lung was consolidated without intervening aërated portions in the same patch and the remainder of the lung showed evidences of only a diffuse bronchitis. The consolidation was very slow in its development, not being observed until several days, a week or even longer, after the initial symptoms; and when the consolidation was pronounced it gave the characteristic physical signs observed in adults, viz., dulness, bronchial breathing, and bronchophony. Distinct crepitant râles were wanting over the consolidated area, but crepitating, cracking, and mucous râles were very abundant. Small and large mucous râles were diffused over both lungs. Consolidation persisted during the entire course of the pneumonia, and, in the cases that recovered, slowly cleared up, and, within a few weeks after the temperature became normal, the lungs were clear.

The pulse was fast, rather weak, but not distinctive, and corresponded to the intensity of the infection, as measured by the pyrexia, lung-involvement, etc. The pulse-rate varied from 140 to 180. The examination of the heart did not reveal any symptoms of peri-, myo- or endocarditis, but complications on the part of the heart are very frequent during the course of the grip in infants; more particularly are found weakness, dilatation and failure of the right heart. Fluid or fibrinous exudate in the pericardium has been observed in older children and postmortem changes in the myocardium of a degenerate nature are not rare.

The nervous system was signally exempt from any complication in these cases, if we except the early restlessness and irritability, and in one case the slight rigidity of the lower limbs, though many observers have noted convulsions and paralysis from involvement of the central nervous system, and meningitis from influenza is not unknown. Hemorrhage and abscess in the brain, disseminated myelitis, hemorrhagic pachymeningitis and peripheral neuritis have been encountered during the grip.

The urine presented the usual febrile characteristics. It was strongly acid in reaction, of a high specific gravity and contained abundant urates. In only one case was albumin present, and this was two weeks before the fatal termination, when a nephritis developed which became very intense and was in a great measure responsible for the unfavorable termination.

The abdomen was usually distended with gas, at times even considerably, but offered no other abnormal conditions. There was neither rigidity nor tenderness, and the liver and spleen were not palpable. Herpes was observed in one case, but no other skin eruption was noted in these cases. Mention should be made of the profuse perspiration which was present in all of the cases and which is said to be dependent upon an angio-neurosis—a vasomotor paralysis—due to the grip-toxin.

The literature records, as occurring in grip in children ,an exanthema simulating closely either the diffuse punctate erythema of scarlatina, or mayhap the mottled reddish eruption of measles. Sudamina, urticaria, erythema, nodosum, erysipelas, pemphigus and hemorrhages into the skin have been observed, although, as was stated, these eruptions were not present in the cases under consideration. Otitis media appeared in two cases, which is in accord with the known frequency of this disorder complicating inflammations of the upper respiratory tract, particularly during early life. Slight hyperemia alone was observed as regards the ocular complications, though severer disturbances have many times been recorded.

Pathology.—Concerning the pathology of protracted influenzal pneumonia, because of the necessary limits of this paper, only some of the important data will be considered. The anatomical form of protracted grip pneumonia is essentially catarrhal. The pneumonia may occur acutely, suddenly involving a great extent of lung, just as in croupous pneumonia, but in my cases the pulmonary consolidation was slower in its involvement of the lung, but resembled the croupous pneumonia in its lobar distribution. The pneumonias were characteristically desquamative or catarrhal and were accompanied by diffuse inflammation of the fine and larger bronchi. The entire respiratory tract was congested. This was particularly true in the small bronchi, and the mucous membranes were covered with a tenacious mucus. In some of the smaller tubes the entire lumen was choked with muco-pus.

Within the lobules, the alveoli were filled with a cellular exudate made up of pus, desquamated epithelium and a granular debris. Fibrin was conspicuously absent. The alveolar walls were densely infiltrated with round cells, the blood-vessels in the bronchi and interalveolar tissue were engorged, and in one of the specimens they were filled with firm thrombi. This vascular thrombosis, in one of the specimens, had occasioned a small area of necrosis with softening, and from a more extensive thrombosis, a larger area of pulmonary gangrene or abscess might result. The pleural surfaces were smooth and presented no signs of inflammation, though purulent pleurisies are frequently encountered secondary to grip pneumonias.

Pericarditis has been observed and, as a rule, there is a catarrhal inflammation of the mucous membranes of the stomach and bowels. In some cases the lymphoid nodules in the small intestine are swollen, and may even be necrotic and ulcerate. Peritonitis is a rare metastatic complication. The liver may be the seat of abscess formation, though usually the only pathologic alteration in the liver is an albuminous degeneration. The kidneys, in one of the fatal cases, were the seat of an advanced diffuse nephritis with microscopic foci of suppuration. Usually a cloudy degeneration of the tubular epithelium and a slight exudate in the glomeruli, with hyperemia of the tufts, represent the extent of the renal lesions in grip, rather than the severer lesions of necrosis or suppuration. Metastatic processes of a suppurative nature, in the glands, bones or joints, are occasional complications of grip pneumonia, and in the same category might be included thrombo-phlebitis, with phlegmasia alba dolens.

The duration of influenzal pneumonia varies within wide limits. One extreme may be represented by this series of cases, other cases being almost evanescent or diurnal in their duration. The greater number of cases of grip pneumonia probably continue over a space of time that would represent the mean of these extremes. Two of the four cases perfectly recovered, one after twenty-five, the second after forty-one days; two died, one with the lungs in a condition of purulent pneumonia, localized pulmonary abscess and metastatic nephritis; the other, as the immediate result of a complicating infectious disease, with the lung in a state of splenization.

Pulmonary abscess and gangrene are particularly to be feared in these pneumonias, and the probability of their occurrence is enhanced because of the extensive thrombosis of the pulmonary blood-vessels. Complications with abscess or gangrene are almost always fatal. Even after months of protracted pneumonia, a complete restoration to normal pulmonary tissue may occur; or, connective tissue destruction of large areas of lung may result, with perhaps the formation of bronchiectatic cavities that invite secondary infection with pus microbes, leading to suppurative necrosis or ulcerative processes. Tuberculosis is a very common sequel to protracted influenzal pneumonia.

Diagnosis.—In the presence of an influenzal epidemic, with evident grip infection in other members of the household, the probability that a serious illness in an infant was influenza would suggest itself. The following diagnostic features of grip pneumonia would be included: the sudden onset of a sickness, with mild intestinal symptoms and evidences of inflammation of the upper respiratory tract; sharp elevation of temperature and highly irregular course of fever, with the physical signs of a lobar pneumonia, and the demonstration of Pfeiffer's bacillus would render the diagnosis positive.

The differential diagnosis would include particularly gastro-intestinal infections (dietetic or specific, such as typhoid), pneumococcus pneumonia or ordinary broncho-pneumonia, malaria, sepsis and miliary or diffused tuberculosis. In typhoid the onset is more gradual, the temperature-curve more regular and the respiratory symptoms are not so pronounced. The Widal blood test and the Ehrlich urine reaction, the roseola and splenic tumor are wanting in influenza, and the infrequent occurrence of typhoid in infants would weigh against the diagnosis of typhoid.

Gastro-intestinal infections might present considerable difficulty for a few days, but the greater severity of the pulmonary symptoms, the irregular temperature, and the negative result of dietetic treatment, would weigh against it. Grip pneumonia may offer many of the symptoms that occur in malaria. Irregular course of the temperature, that may even be periodic, and the profuse sweats might be accepted as malaria, if a thorough examination were neglected. From malaria the diagnosis would be turned, by the absence of plasmodia in the blood, the absence of splenic tumor and the failure of relief through quinin.

So many of the signs and symptoms of influenza are common to tuberculosis that the greatest difficulty may arise in a differential diagnosis of these conditions. The pulmonary signs, which are of slow evolution and persist longer than lobar pneumonia, with the irregular temperature, the fast pulse, the accelerated respirations with cyanosis, and the profuse sweating, may constitute a clinical picture of tuberculosis. Tuberculosis is difficult to differentiate in these cases and it is only after repeatedly failing to detect the tubercle bacillus and the finding of the Pfeiffer organism that one feels content in excluding tuberculosis. The tuberculin test is rarely employed. In miliary tuberculosis, it is true that tubercle bacilli are rarely found in the sputa, but here the finding of the influenza bacillus, mayhap in pure cultures, would weigh against tuberculosis. The history of an inherited tubercular tendency or possible contact with phthisical individuals would favor a leaning toward tuberculosis, and the absence of such a history would have a negative value.

Prognosis.—In venturing a prognosis we must be extremely guarded. Severe cases might entirely recover under favorable circumstances, but the possibility of imperfect recovery, with lasting pulmonary disease, should be kept in mind. Death, during the height of the disease, may occur from the severity of the intoxication, with extensive pulmonary disease and failure of the right heart. It may occur from influenzal complications in other organs, i. e., kidney, brain, etc., or the lessened resistance consequent upon the grip may permit usually mild infections, such as varicella, to kill, and too, the frequent occurrence of tuberculosis as a sequel to grip must be ever kept in mind.

Treatment.—There is no specific remedy for influenza, and these cases must be treated individually on general principles. Grip cases should be isolated, so far as possible, and this particularly in hospitals and infant asylums. We should select for the little patients a large well-ventilated room, free from noise, and one that is kept moderately warm—80 to 85 degrees F. This is much warmer than advised in ordinary pneumonia. Infants do better if carried about a few hours each day than if permitted to lie all of the time in bed.

Diet is most important and should be nutritious and conform to the digestive capabilities of the infant. Certified milk, meat juice, cereal decoctions, fruit juices and plain water, when properly administered, are usually sufficient. A tepid bath should be given every day. The mouth and nostrils should be given the greatest care, using a gentle alkaline and antiseptic wash several times a day. It is customary and advantageous to relieve the gastro-intestinal tract by a laxative or enema at the onset of the illness. We should avoid the nasty, sweet stuffs commonly given as cough mixtures, for these cause a degree of gastric distress greater than any sedative effect they may have.

Belladonna and nux vomica, given in physiologic doses, probably act better than do other medicines in the average case of infantile pneumonia. They act as general and especially as respiratory stimulants, promote deeper breathing and free the bronchial tubes of considerable mucus; what is of especial value, they keep up the heart strength, which, in infants, is likely to fail, because of the added mechanical work to a heart receiving impoverished and toxic blood. Heart failure, of the right heart particularly, should be guarded against from the beginning, rather than to await the onset of cardiac failure. In the event of impending cardiac failure, in addition to strychnia, we may employ camphor, nitroglycerin, ammonia or its salts, whisky, and the careful administration of digitalis.

The peripheral circulation can be favored by stimulating baths, such as hot mustard baths. Inhalations of hot moist air, plain or medicated, as administered under a tent, may relieve the symptoms of suffocation that supervene so often in infant pneumonias. An infant may be placed in the tent for fifteen to thirty minutes several times a day. Cold applications to the skin frequently act in a very happy manner in cases of threatened suffocation. Dipping the child into a cold and then into a warm bath, followed by brisk friction, acts as a great respiratory and cardiac stimulant.

A cotton jacket around the chest is often grateful to the patient, and I have thought that a calomel plaster —5 per cent. calomel in lanolin—placed over the consolidated lung, favorably influenced the pathologic condition. The temperature should be combated, if the necessity be present, by water, rather than by antipyretic medicines. In some cases these remedies may act in a pleasing fashion, but it is safer to have recourse to hydrotherapy, cold sponging, spraying, baths, friction, or enemata of cold water, not only to reduce the temperature, but to act as general tonics. In protracted cases the bitter tonics and tonic wines, iron, arsenic and cod-liver oil, find their place, and if convalescence be prolonged, a change of residence to a dry, warm, equable climate might be of inestimable benefit.

Case 1.—Anthony F., aged 1 year; weight, 21 pounds 9 ounces.

Dec. 20, 1900: Admitted to asylum; history of having been sick one week. Had poor appetite, with greenish mucous stools three times daily; severe cough and irregular temperature. Examination: Skin pale, sallow and hot; mouth, normal appearance, six incisor teeth; the lymph glands are enlarged universally to a slight degree; over the back of the right lung below the scapula there is an area about two inches in diameter, where signs of pulmonary consolidation were found; left lung presented negative findings, heart normal, abdomen somewhat distended.

December 24: Child has been fretful; poor appetite, stools contained some mucus, severe coughing spells with thick tenacious sputum. Over the right lung, posteriorly from the middle of the scapula to the base of the lung, and extending from the spine into the axilla, resonance is dull, with many râles on auscultation; in the center of this area, bronchial breathing and bronchophony are present. The sputum, examined for tubercle bacilli, was negative, but showed the influenza organism in great numbers. Other bacteria being sparsely met with.

December 29: Pale and much emaciated. The bowel movements have been frequently offensive, with undigested particles. Urine, specific gravity 1010, contained neither albumin nor casts. Cough not so severe. Physical examination of the lungs, same as December 24.

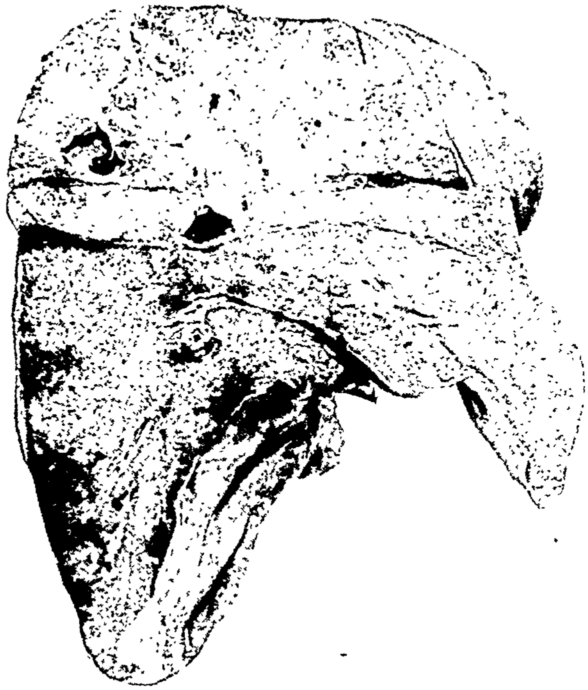

Fig. 1.—Purulent influenzal pneumonia with foci of softening.

Jan. 17, 1901: The appetite has been variable; no vomiting; bowel movements at times contain mucus and undigested masses. Cough, sometimes very severe with little expectoration. Respirations, 50 to 60 a minute, regular and free. Has lost considerable strength and flesh. Physical examination of chest revealed the same physical signs with each examination, that is, evidences of the consolidation of the right lower lobe, a few mucous râles heard here and there over other parts of the chest.

January 31: General condition somewhat improved. Cough not so severe nor frequent; resonance over right lung has cleared up materially since January 21. Respiration is subdued on the right side, with very few râles.

February 15: Varicella. Resonance over the right lung posteriorly is slightly impaired, no râles, respiratory tones are normal.

March 1: General nutrition very much improved, digestion almost normal, no evidence of pulmonary disease, temperature normal, general condition satisfactory.

Case 2.—Annie Sweeney. Aged 1 year, only child of healthy parents, moderately well nourished, reared on mixed feeding, weight 18 pounds.

Jan. 6, 1901. She was observed to be ill, fretful, and crying, refused the breast and bottle altogether, or took but little. Sleep was restless and disturbed; temperature elevated; breathing rapid and interrupted by short cough. Bowels moved four times daily, were dark green with much mucus and offensive odor. Examination: The mouth, tongue and throat were red and dry; there were some small moist râles over the back part of both lungs; abdomen somewhat distended.

January 10: General condition about as above, and on examining the chest, the râles were more numerous and abundant over the back part of both lungs.

January 12: Appetite has not been keen, bowel movements are rather free, but of normal appearance; at times there was considerable distention of abdomen and retching, was relieved by lavage. The attacks of coughing not very severe, but persistent. On examining the chest there was an area over the posterior surface of the left lung, extending from the spine of the scapula to the eleventh rib and from the spine to the posterior axillary region, where there was dulness, bronchial breathing and crepitant râles. Small mucous râles occasionally were heard over the remainder of both lungs. Heart was negative; Traube's space of normal size.

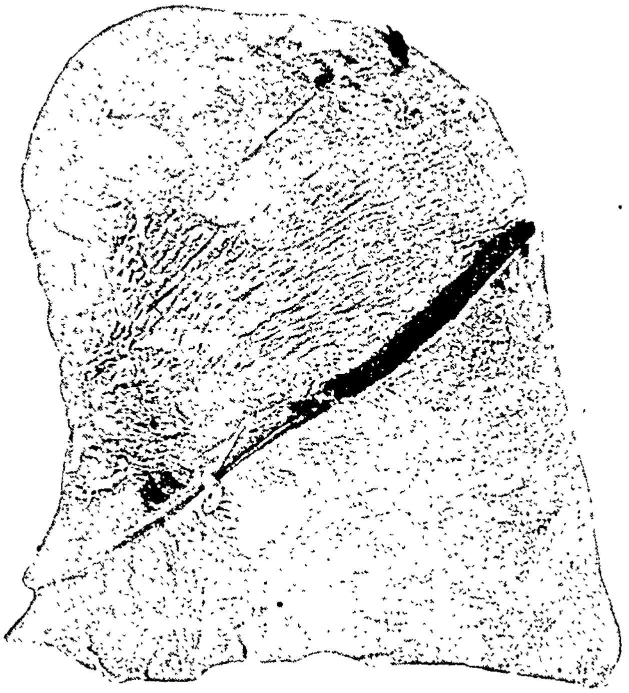

Fig. 2.—Splenization following protracted influenzal pneumonia.

January 22: The symptoms have persisted in much the same manner. The resonance over the entire left lung is impaired and posteriorly, below the spine of the scapula to the base of the lung, the note is almost flat; on auscultation there was bronchial breathing with crepitant râles. Although there was no dislocation of the heart, and Traube's space extended from the sixth to the costal arch, yet because of the irregular temperature and protracted course, a thoracentesis was done but with negative result.

January 25: Same physical signs as January 2, except that the periphery of the area seemed to be clearer.

January 29: Resonance over the left lung is almost normal. Respiratory movements free, and normal in quality, though more frequent than normal. On the left side the respiratory murmur is shallower than on the right and on deep inspiration is accompanied by a few râles. General condition much improved.

January 31: General condition satisfactory, no abnormal thoracic nor abdominal signs.

Case 3.—Mary T., aged 13 months, was fed on human and cow's milk until she was 8 months old. Since then has been nourished on modified cow's milk alone. During her infancy she had several attacks of acute gastro-enteritis, and when six months old she had the measles with broncho-pneumonia.

Jan. 7, 1901: For the past few days she has been out of sorts, with little appetite for food and a considerable elevation of temperature. She had a slight cough and several times, during the day, she had periods of very rapid and shallow respiration, with considerable cyanosis of the face and extremities. Examination showed the child to be fairly well nourished, the skin dry and hot, with no exanthem on the body. The tongue was red and dry, slightly coated; the gums not inflamed, had 8 incisor teeth. Pharynx was moderately injected. Respirations were accelerated, but free; no signs of consolidation of the lungs elicited, but numerous small, moist râles were heard over front and back of both lungs. Heart was rapid, otherwise was negative. Abdomen was slightly distended, no tenderness nor rigidity; liver and spleen were not palpable.

January 12: Respirations frequent and catchy, often interrupted by a short cough; very restless at night. Lower limbs rigid; appetite poor. Over the right side of the chest, from the clavicle to the third rib, were dulness, distant bronchial breathing, bronchophony and crepitant râles. Coarse mucous râles over the rest of lungs.

January 14: Mucous membrane of nose congested with slight muco-purulent discharge. Ears negative; physical signs over the chest same as January 12.

January 18: Symptoms and physical signs remain as above noted. There was also a purulent discharge from both ears. Urine was high-colored, and contained traces of albumin and a few granular casts. Herpes on angle of mouth and alæ nasi.

January 22: Upper lip swollen and excoriated from purulent discharge of nostrils. Urine became gradually less in amount, contained large amount of albumin, and numerous coarse granular casts. From the apex of the right lung anteriorly, to the fourth intercostal space, the signs of pulmonary consolidation persisted, with evidences of a profuse bronchitis. The sputum and nasal secretions were repeatedly examined for tubercle and influenza bacilli with positive results as to the latter. Vomiting, with great restlessness and twitchings and gradual failure of strength, preceded the fatal termination.

Postmortem: The right upper lobe was entirely consolidated and of a uniform, yellowish-gray color. About the middle of the lobe was a focus of softening about the size of a hazelnut, projecting like a blister beyond the level of the lung and containing about a half dram of thick pus. Below this small abscess is an area of caseous necrosis, a half inch in diameter. The color of the cut section of lung was grayish-yellow, almost homogeneous, slightly granular, dry and airless. Irregular areas of emphysema and atelectasis were scattered throughout the remainder of both lungs. Mucous membrane of bronchi was congested, and from the bronchioles could be expressed fine droplets of muco-pus. Scattered through both lungs, particularly at the base, were some small peribronchial nodules of consolidated tissue of a deep-reddish color. Smear and cultures from the cut surface showed the influenza bacillus with the pneumococcus and streptococcus. Liver and spleen were practically normal. Kidneys were much enlarged; the left 2¼ by 1¾ by 1 inch; the right 2½ by 1¾ by 1. They were quite soft. Pale-yellowish color, the cut surface oily and yellowish-white casts. Relation of the cortex to the medulla is about the same. No cortical markings, medulla is pale with irregular areas of congestion. Microscopic examination of the kidneys showed the glomerular tufts swollen, nuclei more numerous and in some capillary tufts were separated from capsule by a finely granular material. The epithelium, lining the convoluted tubules, was swollen, coarsely granular and the nuclei in many cells not staining with hematoxylin. Some desquamation of renal epithelium. Sprinkled to the cortex are many small areas where the intertubular connective tissue is thickly beset with a mass of round cells forming a minute, yet veritable abscess. Stain for bacteria negative. Section through the consolidated area of lung showed alveoli filled with a cellular mass made up in great part of round cells, with a few fatty epithelial cells and granular debris. There was no fibrin and only rarely any red blood cells in the alveoli. The alveolar connective tissue was densely infiltrated with round cells. In some fields, the alveolar septa cannot be differentiated from the alveolar contents, the whole field consisting of a mass of round cells with some larger epithelial cells, resembling a purulent focus. Some of the pulmonary blood vessels are filled with an organized clot that has become adherent to the vessel wall. The smaller bronchi are filled with masses similar to those in the alveoli (Fig. 1).

Case 4.—Mathew, aged 10 months, weighs 18 pounds; family history unknown; brought up on sterilized milk. Evidences of congenital syphilis were observed when two months of age; papulo-erythematous rash over chest, abdomen and plantar aspect of feet; when six months old had a gumma an inch in diameter on the scalp, over the center of the left parietal bone, and a smaller gumma on the right tibia, both of which quickly resolved under specific treatment. At 8 months had a severe attack of bronchitis lasting two and a half weeks. Good recovery.

Jan. 14, 1901: Refused the greater part of his food and vomited; bowel movements, sour odor and contained considerable mucus, with particles of undigested and greenish material. Severe distention of abdomen. Examination: Moderate nourishment; skin burning hot, dry, no exanthema; tongue slightly coated, two lower incisors; pharynx injected; no pulmonary signs or symptoms, save that the respirations were 40; abdomen distended and tympanitic. Put on appropriate treatment and noted apparently gradual improvement until January 21, when temperature became high, respirations more rapid, and irregular with a soft, small and frequent pulse. Examination: Left lung posteriorly from the left scapula to the base and extending from the spine to the mid-axilla, dulness; bronchial breathing; bronchophony, and consonating râles. Over remainder of chest, lungs are hyper-resonant with many medium-sized râles. Heart rapid, area a trifle reduced—pulmonary distention—abdomen greatly distended; spleen or liver not palpable.

January 25: During the past ten days, child has had little appetite, been very apathetic, content to lie quiet most of the day, but often disturbed by periods of rapid, superficial breathing, attended by great cyanosis. These spells occur at irregular periods from two to five times in twenty-four hours, perhaps more often during the night. Sometimes lasting for an hour and seemed to be relieved by alternating hot and cold baths. Sometimes the child would become very restless, with the abdomen extremely tympanitic, and after the passage of some gases by mouth or rectum, occurring spontaneously or assisted by rectal or gastric tube, would grow quiet again. There has been more or less cough every day; it was dry, short and in paroxysms like a mild pertussis. Sputum was twice obtained; was of a thick, cream-yellow color, and smear and culture showed presence of Pfeiffer's bacillus. Physical examination same as January 22. Slight muco-purulent discharge from both ears.

January 29: Respirations, short and catchy, resonance over the left lung posteriorly is from semi-tympanitic to nearly normal, but over this area can be heard distinctly bronchial breathing and crepitant râles, with fine mucous râles over both lungs.

January 31: Resonance over left lung posteriorly clearer, but breathing has yet a bronchial character. A few crepitant râles over the base.

February 5: Resonance over the area of left lung described, is semi-tympanitic with crepitant and crackling râles, and broncho-vesicular breathing. Ears are getting better, discharge almost ceased and appearance of the drumheads normal. Abdomen distended. General micropolyadenopathy. Child has lost since sick, over three pounds, but for the past few days seems to be becoming stronger and brighter, with keener appetite, though respirations remained hurried and pulse small and frequent.

February 14: Condition of lung much improved, but crepitant and consonating râles remain over left lung posteriorly.

February 18: Yesterday developed varicella. During the past few days has failed very much, has become much emaciated and exhausted.

February 20: Very thin, extremely weak, pulse fast and feeble, respirations frequent, cyanosis and death.

Postmortem.—Body emaciated, the evidences of varicella remain on skin. The lungs show marginal emphysema with irregular areas of congestion. The left lower lobe is of a dark purplish-red color uniformly solid, consistency of the spleen. Section dark-red, granular, with muco-pus exuding from the small bronchi. The tracheal and bronchial mucous membranes congested. Smear from lung shows influenza organisms predominating. The heart, lungs and kidney were normal and spleen slightly enlarged. The stomach greatly distended and contains 16 fluid ounces. The wall is pale and atrophic. The glands in the mesentery are swollen, many to the size of a filbert and are of a deep-red color (Fig. 2).

DISCUSSION.

Dr. I. A. Abt, Chicago—I think we are deeply indebted to the author for this very excellent résumé on protracted and grip pneumonias. It has been my misfortune to have seen quite a number of cases of protracted pneumonia. In my opinion, not all protracted pneumonias are of the grip variety. We know very well that pneumonias, whether broncho or lobar pneumonias, may be due to a streptococcus or a staphylococcus or to the tubercle bacillus, to the influenza bacillus, or perhaps to other micro-organisms. I have seen protracted pneumonias at times when there was no grip epidemic. I have always experienced difficulty in differentiating a possible tubercular consolidation or a diplococcus or an influenza consolidation, and from an empyema. In the cases reported by Dr. Walls there was bronchial breathing without râles over the base of the lung. These cases continue for weeks with sweats and fluctuating temperature, and we are led to suspect empyema. Every clinician of experience knows that a localized accumulation of pus in the thoracic cavity may give rise to bronchial breathing just as in pneumonia. An experience which I have had in more than one case shows the difficulties which may be encountered. Two winters ago, during the time when grip was epidemic, such a case of protracted pneumonia occurred. There was dulness and bronchial breathing over the base of the right lung. I introduced a needle into the lower portion of the thorax and obtained a turbid serum. A culture from this serum showed the presence of diplococci. On the following day another aspiration was made, but no fluid was obtained, probably because all of the fluid present had been evacuated at the first attempt. There was a lobar pneumonia which ran a chronic course for months.

Dr. B. R. Shurly, Detroit—I wish to call attention to observations made on some 16 cases presented; there seemed to be a pseudo-crisis on the *fifth* day.

Dr. Campbell, of Kansas—I would like to ask if the author has had any experience with oxygen gas.

Dr. Walls, in reply—The question of differential diagnosis has been brought up by Dr. Abt. I omitted this part in reading the paper because of the extent of the subject. The differential diagnosis between a consolidation and a collection of fluid at times is certainly hard to make. In one of the cases reported, thoracentesis was performed. Even though in that case the common signs of accumulation of fluid—dulness, dislocation of the heart, and diminution of Traube's space—were not present, it was thought that possibly there was a small collection of fluid in between the fissures of the lung. I did not say that there were no râles heard over the areas of bronchial breathing, but that there were no distinctly fine crepitant râles as heard in the early stages of pneumonia. Crepitating and mucous râles were heard over these areas. They might be heard over fluid, the sounds being conducted from the adjoining lung. The ages of the children varied from ten to fourteen months. I have had no experience with oxygen gas in these cases.

The Paris Students' Co-Operative Restaurant.—Shares to the number of 862 have already been disposed of, so the success of this undertaking is assured. No alcohol will be allowed on the premises, but the fare is to be of the best, at prices constantly lowered by the application of the profits. Professors Gide and Lavisse have been the moving spirits, both men with extensive experience in co-operative enterprises. The doors will open October 15.

MEMBRANOUS COLITIS.*

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Membranous colitis occurs most frequently in infants over six months old and less than two years, and may appear in those previously in good health. It is usually a very severe irritation, greatly endangering the health and life of the child. While it may follow a catarrhal disturbance, it commonly appears suddenly accompanied by vomiting, high fever, loss of appetite, severe pain and frequent large green stools of a mucous character. The vomiting usually disappears early and the temperature falls within safe limits. Should this not occur the prostration is very great and the child melts away so rapidly that its life is quickly endangered. Usually the abdomen is tender and somewhat swollen. The pain is severe and frequent, especially for a time before stool. Where the irritation is low in the colon, there is marked and severe tenesmus at stool causing an inch or two of the mucous membrane of the bowel to protrude. This is intensely congested and often shows patches of pseudo-membrane on its surface, which fact establishes the diagnosis.

The stools resemble those in catarrhal enteritis, except in the amount of blood, which is generally greater and more constantly present; but the only feature which establishes the diagnosis is the appearance of the pseudo-membrane. This shows as grayish-yellow opaque masses after the stool is washed away. It is then easily distinguished from the accompanying mucus, which is commonly large in quantity. The pseudo-membrane seldom appears in large amounts, and usually disappears from the stools, while the mucus and blood may continue for considerable time afterwards. Usually improvement is indicated by the absence of the blood and the lessening of the mucus, with the return of healthy yellow stool mixed with the mucus. Where this does not occur, and the mucus continues for more than a week as the predominating feature in the stool, the emaciation is marked and the case rapidly becomes grave indeed. The severity of the attack and the gravity of the prognosis are in proportion to the amount of mucus passed daily and the length of time it continues to come. These cases generally recover in ten days or two weeks; where they continue longer the prospect of recovery is not good.

This disease is very rare in young infants under six months of age and is mostly confined to those that are hand-fed, and also improperly fed. Rarely do we find a case appear in a nursing infant, particularly during the first months of its life. In hand-fed infants also, where intelligence demands yellow stools, and industry secures their continuance, it is indeed a very rare thing to see cases of "membranous colitis."

It has been the fortune of the writer to meet with three cases of this disease this year in very young infants. One was in a nursing infant ten days old; one in a hand-fed infant eighteen days old; and the last in an infant partly nursed and partly hand-fed, nine weeks old.

The first or nursed one was an infant, strong and well nourished, weighing nearly nine pounds when born. The mother was a large, active, rosy-colored woman, but one who suffered greatly from acidity and consequent heartburn during her pregnancy. So great was this that she was compelled to live almost entirely during the last two months of her pregnancy on meat, milk and eggs. She had a feeble labor, necessitating forceps delivery, with laceration of the perineum, which was repaired; she made an uneventful recovery, save that she persisted in having a temperature of 102 for several days, and also about 100 for a month or more after her labor. This was accompanied by a coated tongue. The mother was very carefully dieted from the day of labor, and her milk came on the fourth day. The child's bowels were green continually from birth and no food except a little sugar water and a small dilution of cream was fed until the mother nursed it. The stools continued green and slimy, showing only small traces of yellow, till the ninth day, when the child became violently disturbed with high fever, great pain, frequent green mucous stools, straining and tenesmus. It lost flesh rapidly and in the third day of its sickness passed some patches of opaque yellowish membrane looking much like those cast from the throat in diphtheria. The infant was removed from the breast entirely and fed with a cream mixture, on which it convalesced rapidly; the stools became yellow and well formed and all mucus disappeared in ten days. A microscopic examination of this membrane, made by Dr. Perkins, showed the membrane was structureless, like a mass of fibrin with no mucus or epithelial cells.

Culture from this pseudo-membrane showed a bacillus belonging to the colon group, but not the true colon bacillus described in text-books, as it did not coagulate milk, nor give the indol test. The structureless character of this pseudo-membrane showed it to be an exudate due to intoxication from the toxins of these bacilli. Injections of these toxins and the germs into guinea-pigs' abdomens showed an exudate formed over the intestines and the liver, having the same structureless character as the sample.

The second infant was eighteen days old when the writer was called in attendance. This was the fourth child of a mother unable to nurse her children. It had been fed at first on diluted cow's milk, then on diluted cream, next on almost raw oatmeal water and cream, with the result of loss of flesh, constant colic, constipation and stools, when voided, of yellow hard balls, coated with slime and having very foul odors. The symptoms and the recurring colic pointed to a sore spot in the bowel somewhere in the colon, as the pain always returned with great violence about fifteen minutes before stool. Six days after my first visit the stool contained a mass of tough yellowish-white membrane, also looking like that seen in the throat in diphtheria. With a careful adjustment of a cream mixture and the voiding of this membrane, this infant made a rapid recovery, having healthy stools.

A microscopic examination, also by Dr. Perkins, showed this membrane contained fibers of oatmeal husks, pus cells, and small masses of mucous tissue, and imbedded in the tissue were the bacilli of the streptococcus. Cultures made from this membrane showed the proteus vulgaris and streptococcus. Injections of this culture in very small quantities killed guinea-pigs and rabbits, and on the intestines and liver a similar membrane was developed. Experiments show that the growth of the streptococcus in the presence of this very fatal proteus vulgaris, increases the toxic property of the former.

Feeding the nearly raw oatmeal fibers to this infant caused abrasion of the mucous membrane, thus forming a favorable nidus for the entrance of these germs and the consequent formation of this membrane. This child now continues healthy and grows rapidly.

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* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Diseases of Children, and approved for publication by the Executive Committee of the Section: H. E. Tuley, Edwin Rosenthal and Samuel W. Kelley.

The third child, 9 weeks old, had been nursed by its mother, a delicate neurotic, suffering from middle ear disease. She had rose asthma disturbance every year so that she was compelled to leave her home in May and spend her summers in Lake Superior ports. She nursed her baby for a few weeks and it grew to ten pounds in weight. Sickness compelled her to wean it at five weeks old. Improper adjustment of food to the child's digestive power soon set up a disturbance, causing vomiting and colic with great fermentive accumulations of gas in the stomach and bowels. Changes in the food failed to reach the correct digestive results and the little one continued in distress, losing sleep and weight, till at 9 weeks old, when the writer first saw the infant, it weighed only eight pounds. Examination showed it much emaciated with a distended abdomen and the skin hanging loosely on its body and limbs. Vomiting followed every meal and constipation was the rule, with great pain before stools. The stools were yellow, dry, and covered with thick mucus. The pain at stool and the mucus over the discharges showed a sore spot low in the colon as in the second child. This infant had been fed too much at each meal and also had too much proteid in its food, thus causing indigestion, constipation and irritation of the colon. The nurse said it had passed some patches of membrane before my attendance, but I failed to find any. A careful adjustment of the food failed to make it grow and a wet nurse was necessary to save its life. With the latter it succeeded satisfactorily. The history of this case was so similar to that of No. 2, that the writer regrets his inability to secure a portion of the membrane for pathologic investigation.

While these cases do not conform to the usual symptoms seen in cases of membranous colitis, the writer feels that they belong to it, even though the pathologic evidences differ from each other. The very early age at which this irritation began and the varying character of the stools, make these cases interesting and is the writer's reason for presenting this subject. While only the first case showed the usual symptoms of loose bowels, recognized as accompanying "membranous colitis," the presence of membrane and mucus with pain at the stool even when with a constipated condition, establishes the fact that the irritation and distress are in the colon, and are of a membranous character. While the etiology is similar in these three cases, they show that the bacteriologic factors may differ greatly.

While the cultures from these two samples of membrane do not agree in character, one showing a colon bacillus and the other showing a mixed infection, the proteus vulgaris with the streptococcus, the irritation, pain and distress were similar, and the infants showed the same emaciation, fermentive disturbance and pain prior to stool.

The importance of recognizing the food as the cause of the sickness in both nursed and hand-fed infants, can not be overestimated. The difference in the character of the food will no doubt account for the different germs in these two cases, the nursed infant showing only a colon bacillus, while the hand-fed one showed two foreign ones.

Writers on this disease describe the loose slimy or mucous character of the stools and their great frequency; but here were two cases, Nos. 2 and 3, which showed a constipated stool of yellow color and yet membrane was present in both.

These cases illustrate the absolute necessity there is always for the physician to examine the stools himself in gastro-enteric disturbances. Few parents or nurses are skilful and watchful enough to read carefully the digestive process as it is illustrated in this stool product. Only the experienced eye, nose and finger of the physician is capable of doing this work correctly. Only by the knowledge obtained in this way can a correct conception of the digestive errors be obtained, and consequently the right changes be made to meet this difficulty in each and every case of gastro-intestinal disturbance. Without such personal examination by the physician, his ideas of the situation are necessarily second-hand ones and the treatment liable to be wrong.

These cases also show that different bacilli have the power, by their irritative qualities, to form a false membrane on the mucous membrane of the bowels.

URETERAL CALCULUS ACCURATELY LOCATED BY THE X-RAYS AND REMOVED BY AN EXTRAPERITONEAL OPERATION.*

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Henry E. S., aged 10, of New Bloomfield, Pa., was admitted to the Jefferson Medical College Hospital Oct. 25, 1900, at the request of Dr. E. E. Moore.

Neither his family nor personal history, other than as related below, have any bearing on the case. When he was 2 years old he had an attack of pain in which he passed bloody urine. Five years ago—at the age of 5—he had another attack of severe pain in the region of the left kidney. The pain extended downward into the scrotum and to the head of the penis. It was finally relieved by the application of heat and the use of morphin. Similar attacks have recurred at varying intervals, sometimes every three or four days, sometimes not for two months. During the winter of 1897-98, in several attacks he passed bloody urine and uric acid crystals. What he thinks was a small stone escaped in September, 1900, but neither he nor any one else examined it carefully. In February, 1900, he had scarlet fever and since then his attacks have been much more frequent and severe. He has never had any pain on the right side.

On admission the entire left side of the abdomen was so painful that it was impossible to make any diagnosis as to the location of a stone, though the diagnosis of calculus was perfectly clear and had already been made by his physician. The urine which he passed on admission was clear, amber-colored, sp. gr. 1013, reaction acid, no albumin, sugar, blood, pus or casts present, urea 1.1 per cent.

Dr. Charles L. Leonard took a skiagraph (see Fig.) which showed a ureteral calculus about one-half the size of the last joint of the little finger, in the left ureter, which was thought to be at the pelvic brim, but at the operation was found a little below this level somewhat nearer the bladder.

At the operation, Oct. 31, 1900, I made an oblique incision from above the crest of the ilium and parallel to it, extending to a point above the middle of Poupart's ligament, and pushed back the peritoneum. I had considerable difficulty in finding the ureter. It was raised with the peritoneum, but was so small, flattened and indistinct that it was some time before I could recognize it. Tracing it downward, just below the pelvic brim, I found a hard mass in which the ureter was apparently lost. No stone could be felt at first, but on cautiously cutting and tearing through the mass, I discovered a ureteral calculus measuring 1.5 cm. in length, 1 cm. in breadth and 8 mm. in thickness. The exterior was rough from the points of many spicules due to crystals, which by their fusion constituted the solid mass. The sharp spicula were especially marked at the two ends. Professor Coplin examined it and reported that the stone was quite dense; the nucleus was dark in color and gave the reaction for mucin. The shell was of calcium phosphate with a trace of organic matter.

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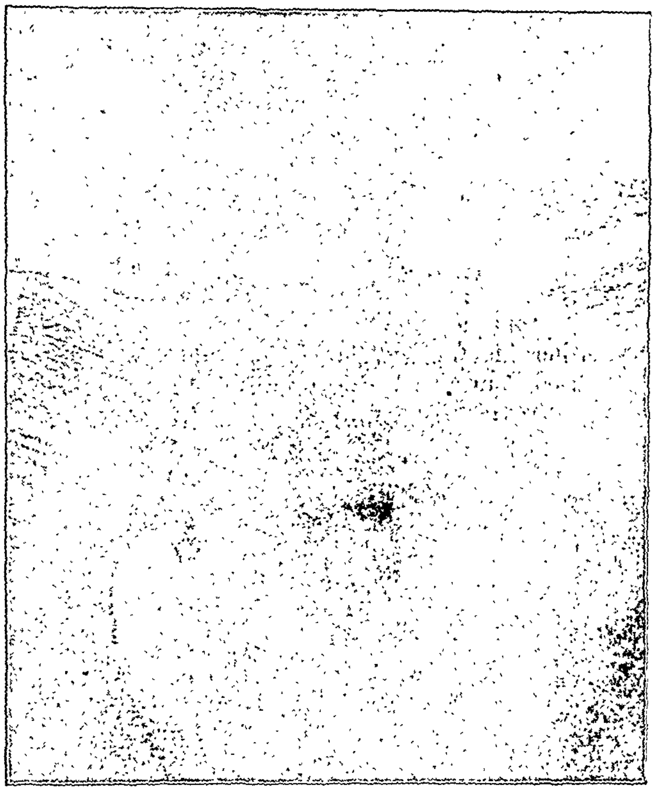
Evidently the calculus had ulcerated its way through the posterior wall of the ureter, had matted together the rectum and ureter and lay in a pouch which was partly intra-ureteral and partly extra-ureteral. The caliber of the ureter was not entirely blocked up by the calculus. The moment that I opened the ureter a very considerable amount of urine, which I estimated at about one-quarter of an ounce, escaped through the ureter from the somewhat hydronephrotic kidney. Though the kidney was somewhat distended, I judged that on removal of the obstruction it would recover itself, especially in view of the recuperative powers of childhood. The edges of the opening in the ureter were then closed by a continuous catgut suture. In view, however, of the inflammatory conditions present, as there would almost certainly be some leakage of urine, I packed a small amount of iodoform gauze against the sutured opening and led the end out through the wound. The muscular wall of the abdomen was then closed with a continuous silk suture, and the skin with interrupted silkworm gut sutures. The gauze packing was removed on the second day after the operation, as I found no leakage took place. He made a perfectly smooth recovery, the highest temperature having only once been 100 degrees. He was kept in bed for between three and four weeks, so as to allow firm union to occur, with a view to preventing a hernia.



March 22, 1901, a letter from Dr. Moore stated that when he reached home, November 28, he was suffering considerably from pain in the region of the left kidney. Examination of the urine showed the phosphates to be greatly in excess. A purge of calomel relieved him from pain and he has never had any since. There is also no sign of hernia at the site of the wound.

No remarks are needed save to call attention to the accuracy and value of the *x*-ray picture, both as an absolute verification of the diagnosis and as a guide at the time of operation. Instead of having to open the kidney with the idea that the stone might be there, or to examine the entire length of the ureter to find it, the skiagraph guided me at once to the exact location of the stone.

DISCUSSION.

Dr. Edwin Rosenthal, Philadelphia—I have at home a small calculus that was passed by a Russian boy *per urethram*. The stone had caused considerable pain and hemorrhage. Microscopic examination showed no diseased condition of the urethra, bladder, ureter or kidneys. The case was seen before the discovery of the *x*-rays and treatment was purely expectant.

I have in mind two cases ending fatally, which I watched carefully almost from their inception. The first diagnosis was calculus. This was followed by hydronephrosis, and still later by pyonephrosis. There was a large tumor on the affected side, which was aspirated once or twice before death. The postmortem revealed the presence of the calculus. If we had only known it I am certain that the life of both these persons could have been saved. Dr. Willy Meyer had examined these cases, and had stated that the pus was from the right side.

Dr. C. L. Leonard, Philadelphia—I have examined and found 47 cases of calculus in the kidney and ureter. In over 50 per cent. of the cases the stone was in the ureter. Of this number, in 4 cases, the expectant line of treatment has been followed, and the patients have passed the calculi. The exact localization of the calculi makes it rational in the case of minute calculi, to adopt this line of treatment. If the symptoms become more severe, the skiagraph enables us to locate and remove the calculus. Where the latter is lodged in the lower part of the ureter, and there has been much inflammation, it is very difficult in the male to reach the stone. In the female it is somewhat more easy. I have had four other cases in which small calculi have been passed while the patient has been waiting for operation. In cases like the case reported, the size of the stone makes it evident that operation is the only course of treatment. The skiagraph, however, localizes the area of operative intervention, simplifies it, and makes it complete.

Dr. S. W. Kelley, Cleveland—I feel gratified that Dr. Keen has reported this case. In my address on the first day, I emphasized the importance of surgery in children, and commented upon the general neglect of this department of pediatrics. A report of this kind is most appropriate for presentation to this Section, and we hope to have more of them.

Dr. Clifton Scott, Des Moines—I am very sure that the value of the *x*-ray method here is of negative as well as of positive value. I had under observation an adult whose illness I diagnosed at first as nephritic colic. If an *x*-ray examination had failed to show the presence of a renal or a ureteral calculus, my error would have been shown. As the hemorrhage continued, and small clots were discharged, the case passed into other hands. An operation was undertaken in the region of the kidney. A tumor of endothelial origin was revealed which had invaded the pelvis of the kidney, and had given rise to the hemorrhage. There was no calculus present.

DR. W. W. KEEN, in reply—I have on at least four occasions cut down upon the kidney in adults under the impression that I had to deal with a stone, and in each instance no stone was found. I think that with the use of the *x*-rays the negative value is quite as great as its positive value by enabling us to avoid such mistakes in operation.

REMARKS ON SPINAL SURGERY, WITH ILLUSTRATIVE CASES.*

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The spinal canal has for many centuries been considered legitimate ground for operative procedures. As early as the 7th century the advisability of operation for fractured spine was urged by Paul d'Egine[1] and others. In the 16th century and since that time, various surgeons have advised operative interference for the relief of this condition, but it was probably not until the beginning of the 19th century that a definite operation was performed for a fractured spine. Since then the subject has constantly thrust itself into prominence and has been much debated and often with considerable heat and vigor. This was especially true of a discussion which took place in the Royal Society of Surgery of London in 1820.

About the same time (1823), A. Cooper wrote: "If you could save one life in ten, aye, one in a hundred, by such an operation, it is your duty to attempt it, notwithstanding any objections which some foolish persons may have urged against it. Though I may not live long enough to see the operation frequently performed, I have no doubt that it will be occasionally performed with success. There is no reason why it should not, and he who says it should not be attempted, is a blockhead." This opinion of the great English surgeon will be accepted by most of us, and it is not very flattering for our self-conceit to feel that at the present day we can not honestly offer a much more favorable prognosis than was given in this statement written nearly a century ago.

Even at the present day there is some difference of opinion on this subject. I remember only last year in an editorial in one of our own leading journals operation on this class of cases was almost condemned or at least no encouragement was given for operative interference. It is true that the majority of cases of severe injury to the spinal column must perish but undoubtedly many a life has been saved by timely interference. I say "timely," for unfortunately delay of a few days before the operation has been performed has in more than one case been responsible for its failure. The tendency in the past has been much more toward the "waiting and watching policy" than has been the case when the brain is compressed by bony fragments. There are quite as urgent reasons for rapid relief in cases of pressure on the cord as there are in cases of depressed fractures of the skull, though perhaps it must be said the results of operation for the relief of fractured vertebræ are less satisfactory than are those for fractured skull, at least such has been the case in the past. The reverse may be said to be true in regard to tumors. Early operation in cases of injury of the vertebræ is of the utmost importance. Of course at times there may be good reasons for delay. The patient may be in a condition of great shock due very possibly to severe injuries of other organs. In such an event it is wiser to wait until it at least can be determined that the case is not one which under any circumstances must end fatally. If it be such, no benefit can be derived from operation. Again, it is sometimes difficult to determine that the symptoms are not due to mere contusion of the cord, or to more pronounced hemorrhage within the substance of the cord—hematomyelia. A certain time must often elapse before this point can be determined.

In this class of cases where surgical interference is not indicated, the symptoms are apt to be of an irregular type. The muscular paralyses are not complete and often the muscles of the same group may not be equally affected; the anesthesia is only partial and paresthesia with patches of hyperesthesia is common. The symptoms of irritation are apt to be less pronounced, though there may be mild twitching at first of certain muscles. The reflexes are not apt to be abolished, though they may be altered. The following cases are in many respects typical:

CASE 1.—Concussion upper Dorsal Cord: Slight Disturbances, sensation and motion; Recovery: D. O. C., male, aged 20. On April 5, 1891, when intoxicated, fell two stories, lighting on his back. He was helpless when found. He complained of pain in the back of the neck. There was no deformity. On April 6, there was evidence of some weakness of the left arm, especially in the flexor muscles. Both patellar reflexes were very feeble. Several areas of paresthesia were present in the lower extremities and trunk. On April 7 and 8, the weakness of the right arm manifested itself. There was more or less persistent priapism. On April 12, the symptoms began to improve and continued so until he was discharged on May 25, when with the exception of slight weakness of the left arm he was practically well.

CASE 2.—Injury of Lumbar Cord; Probably due to hemorrhage; Disturbances of Motion and Sensation; Pain; Ultimate Recovery without Operation: J. O. B., male, aged 34, on July 23, 1889, fell down the shaft of an elevator a distance of 30 feet. He lighted on his feet but fell down and was unable to rise. He had lost almost all power over his lower extremities. He was taken to a hospital in an ambulance. He suffered from considerable neuralgic pains in his legs and feet, and his legs and thighs felt numb and were partially paralyzed.

He was brought to the Presbyterian Hospital on July 27 with a diagnosis of fracture of the second and third lumbar vertebræ. On examination it was found that the peroneal and anterior tibial groups of muscles were partially paralyzed, especially on the left side. There was an anesthetic band extending from the outer side of the foot upwards along the outer and posterior side of legs as far as the middle of the thighs. A few days later it was found that a. c. c. was greater than c. c. c.

It was considered wise to defer the operation as there seemed to be some improvement in the paralyzed muscles. The pain was disappearing, there were no spasmodic movements of the muscles and no contracture developed. Through August and September gradual though slow improvement both as regards motion and sensation took place. He was discharged from the hospital on October 1, at which time he could walk about the ward though he still suffered from foot-drop. After his discharge he continued slowly to improve and at the end of a year he was practically well.

CASE 3.—Concussion of Lower Dorsal Cord; Slight Disturbances of Sensation and Motion; Recovery without Operation: J. D., male, aged 25, on June 1, 1901, while in the act of boarding a car, was struck on the back by a car coming in the opposite direction. He was knocked down and when found by the ambulance surgeon was in a state of considerable shock. He was slightly alcoholic, and complained of extreme pain in the lower dorsal region.

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* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section: W. J. Mayo, H. O. Walker, and A. J. Ochsner.

[1] Trans. by René Briau, p. 409.

On admission his temp. was 99 1/3, pulse 102. There was a large effusion of blood in the lower dorsal region and apparently some deformity of the tenth, eleventh, and twelfth dorsal spines. He complained of shooting pains in the lower extremities and there was some loss of power in the muscles on the outer side of the legs and feet. There was some paraparesis in irregular patches on the back of his thighs and buttocks. The patella reflexes were diminished. There was no complete anesthesia.

The diagnosis was made of hematomyelia in the lower dorsal and upper lumbar cord. On the day following his admission to the hospital his symptoms began to improve. At the end of two weeks the muscular paresis had almost disappeared, though there were still some irregular areas of diminished sensation. The patella reflexes at this time were somewhat exaggerated. On August 1 he was able with support to move about the ward, and when he was discharged on August 8 his paralyses had practically disappeared. By November 1 he was able to resume work, having entirely recovered except for some slight stiffness and an occasional pain in the back.

Case 4.—Concussion of lower Dorsal Cord; Disturbances of Sensation and Motion; Recovery: H. L., male, aged 44, on March 20, 1895, fell backward over a pile of stones. In ten minutes there was complete loss of power in both lower extremities. This persisted for a few hours. There was also complete anesthesia below a line drawn through the umbilicus. For the first few hours the patella reflexes were lost. At the end of 24 hours slight improvement in the motor paralysis began. But little change occurred in the area of anesthesia, until after a week had elapsed. At this time also the reflexes began to reappear. At the end of three weeks he had gained almost complete control of his lower extremities and the anesthesia was rapidly disappearing. At the end of six weeks all symptoms had practically disappeared.

On the other hand where there is definite pressure of bone on some portion of the cord the parts supplied from this center are apt to be more distinctly and more decidedly affected. The paralyses are generally complete and more regular as to grouping; the anesthesia also is apt to be complete with or without a band of hyperesthesia. The reflexes are apt to be abolished. Generally within a few hours a differential diagnosis between these two conditions can be made, but if at the end of 12 or 24 hours there still be question as to the cause of the paralyses it seems to me wiser to at least do an exploratory operation. The danger of this is slight. If a fracture be found there can be no question as to the propriety of the operation. If none be found but little harm has been done to the patient. In similar cases of injuries to the head it is almost routine procedure to cut down upon the skull in order to ascertain if a fracture be present. In the spine the operation is, of course, somewhat more severe, but not sufficiently so to contra-indicate its performance in cases of doubt.

The differences between these two classes of cases are sometimes, however, less marked, and as already said in certain cases in the first 12 or 24 hours it is sometimes exceedingly difficult to determine whether or not the lesion is one which can be relieved by operation. Where the symptoms are severe there can be but little question between concussion on the one hand and compression or crush on the other, but it is in the milder cases where the surgeon must sometimes be in doubt; and here a delay of 12, 24 or even 48 hours can do but little harm, and if the diagnosis be uncertain it is wiser to delay. In the severer cases, there can seldom be question between mere concussion and compression by bony fragments. The question, however, will be whether the cord be completely crushed or whether it be merely contused and pressed upon by broken bone. In many cases it is impossible within the first few hours to determine which of these conditions is present. A day or two's delay will probably settle this point. But it is exactly such delay which makes the recovery hopeless.

As yet, we have not sufficient experience or knowledge to make any definite statement concerning the early symptoms which indicate complete destruction of the cord. We do know, however, that if certain symptoms be allowed to persist for days or weeks that the case will be hopeless. It is our duty to make an attempt to relieve these symptoms and their cause before it is too late. It has been stated more than once that where there is complete loss of sensation, motion and patellar reflexes in both lower extremities that the symptoms indicate a complete crush of the cord and that the case is absolutely hopeless. This view, however, is not correct, as has been shown by more than one case where all these symptoms have been present, and yet where after removal of fragments of bone recovery has resulted. The following case is to be added to this list. In this case both deep and superficial reflexes were lost. Had operation been delayed, however, they might have returned.

Case 5.—Fracture of seventh Dorsal Vertebra; Pressure on Cord producing loss of Sensation and Motion and patellar reflexes; Operation; Recovery: J. L., male, aged 27, was thrown from a railroad train on July 3, 1891, striking on his back. For a few minutes consciousness was lost. When brought to the hospital three hours later, there was found to be complete muscular paralysis of both lower extremities, retention of urine and loss of power over rectum. He was in condition of slight shock; temperature 100, pulse 110. There was complete loss of sensation below a line just beneath the tip of the ensiform cartilage. Tendon reflexes in both knees, as also the cremasteric and abdominal, were completely lost. At the end of 8 hours after the accident his temperature had risen to 103.5; loss of motion and sensation, and patella reflexes remained as before. On examination of his back there was found to be a depression below the seventh dorsal spine, at which point there was marked local tenderness.

The diagnosis of fracture of the seventh dorsal vertebra was made and operation advised. One hour later, that is to say, nine hours after the injury, ether was administered. An incision was made from the fifth to the eighth dorsal spines. The spinous process and the laminæ of the seventh dorsal vertebra were found shattered into several fragments. A line of fracture extended forwards on the right side into the transverse process. Four or five bony fragments were removed. The dura was lacerated and the cord was contused, markedly congested and studded here and there with small hemorrhages. A probe passed upwards and downwards met with no further obstruction. The wound was left partially open, as was also the dura.

The shock of the operation was very slight, the patient making an excellent recovery. For five days no special change in symptoms was noted. He then began to feel some tingling and pricking on the outer side of his thighs and legs. On the 14th day he was able to slightly move his toes and at this time sensation began to return in his lower extremities. Improvement continued; he began to gain control over his bladder and rectum. On the 30th day he could draw his legs up and down in bed, flexing his knees. His patella reflexes had returned to a slight degree in each knee. On the 60th day he was able to sit up in a chair and sensation was rapidly returning. He left the hospital on the 76th day after his accident and at that time could walk when supported on each side. He came to see me three months later and reported that he was about to resume his work. He still felt some slight weakness in his lower extremities but sensation and his patella reflexes seemed normal. Some five years later he met me on the street and reported that he had been perfectly well ever since, that his back was as strong and as limber as ever.

There is a certain class of cases where following injury of the cord, and immediate development of severe symptoms, improvement has set in at an early period and has been up to a certain point and for a certain time progressive. Then, after the expiration of weeks, perhaps of months, it ceases, degenerate changes begin, and if unrelieved in a year or two, bedsores, cystitis or some other complication will end the patient's very miserable existence. In such patients the symptoms may be due to lesions of different character, to blood and inflammatory extravasations as well as to pressure by fragments of bone. The former disappear gradually as time advances, the latter can only be removed by operation. It is difficult to determine which one of these causes is responsible for the symptoms but as long as improvement continues it is wiser to wait unless there be proof positive that a fragment of bone presses on the cord; but as soon as it can be ascertained that progress has ceased and degenerative changes have begun then operation should at once be resorted to. It may not be a success, for the degeneration already begun in certain tracts may be beyond recovery, but at least it should be attempted as it can do no harm and all hope of recovery is otherwise rejected.

It should always be borne in mind that spinal centers will, in spite of severe injury or long continued irritation, still preserve their vitality and that after the removal of the irritation or destroying cause they have remarkable recuperating power which enables them to rapidly gain control over their lost functions. A case where such an operation was remarkably successful is as follows:

Case 6.—Old Fracture Fourth Cervical Vertebra; Extensive Paralysis resulting; Laminectomy eight months later; Cure: E. G., aged 33, a sailor, in October, 1889, during a storm at sea, was struck in the right side of the head by an iron tackle fastened to the end of a loose sail. He was thrown violently to the deck, striking against the anchor. When found he was doubled up, arms and thighs rigidly flexed; head inclined forward, resting on his chest. For a time he was unconscious; on recovering consciousness in an hour or so there was found to be paralysis of the trunk and extremity below the clavicles. It was complete except in the right leg, where it was partial. The head remained flexed on the chest, the patient not being able to hold it erect or move it laterally. For a day or two following the accident he was delirious and restless. For two weeks deglutition was difficult. There was retention of urine for several days; incontinence for one month. For some days there was priapism. Obstinate constipation persisted for some weeks. At first he complained of severe pain in the back of the neck, at first sharp, later dull and aching. Sensation was moderately disturbed. In addition to areas of anesthesia there was for some weeks sensations of pricking and formication.

The rigidity of the arms and legs with more or less muscular paralysis persisted until December. During this time contractures of various muscles developed, as well as wasting of groups of muscles. The paralysis of the right leg slowly improved. After Christmas the right arm began to improve slowly and soon after some return of power in the left arm was noticed. During January he was able to move slightly his arms and legs, and at the end of the month could stand when well supported but could not walk. The improvement, however, did not continue and during February there was some deterioration in muscular power. Since that time there had been no progress in spite of the use of electricity and massage. Marked rigidity of the muscles with contractures of the left upper extremity developed. Some slight motion of the head from right to left returned but he was unable to either raise it from his chest or to hold it erect. Any motion of his extremities or head produced pain on the left side of the neck near the fifth spine where tenderness was the greatest.

He was admitted to the Presbyterian Hospital, May 26, 1890. He was a fairly nourished man with normal temperature. On examination it was found that there was marked loss of power in the left forearm and hand and practically complete paralysis of the arm and shoulder. There was considerable paralysis of both lower extremities to such an extent that it was impossible for him to stand upright without a support on each side. There was also considerable rigidity of the muscles of the left upper extremity. There was considerable atrophy of all the muscles of both extremities, being especially marked in the left arm and trapezius. There was decided paralysis of the muscles of the back of the neck, so much so that the head rested forward with the chin on the chest. He could not raise it and lateral motion was very limited. The areas of anesthesia were somewhat irregular. Sensation below the third rib was very considerably diminished, being most marked in the lower and upper extremities and in the left side of the trunk. The patella reflex of the left leg was markedly exaggerated, and the right slightly increased. There was slight clonus on each side. There were evidences of vasomotor disturbances, the skin being moist and glossy. When in bed resting quietly the patient was free from pain, but movement caused considerable pain, especially in the back of the neck and left shoulder. The patient wore a jury-mast to support his head. Tenderness was elicited by pressure on the back of the neck between the fourth and fifth cervical spines where, on rotation of the head, there was an indistinct crepitus. It was decided that the cord was compressed by either bone or inflammatory exudate in the neighborhood of the fourth or fifth cervical vertebra.

Operation June 4; ether. An incision was made along the spines from the base of the skull to the sixth or seventh cervical spine. When the spines were disclosed it was seen that there was some displacement of the fourth with its lamina. The spine and lamina of the fourth and fifth cervical vertebra were removed. The fourth lamina had evidently been fractured and exerted, posteriorly, considerable pressure on the cord. Under it was found a new layer of connective tissue with a much thickened dura, the combined thickness of which was about a quarter of an inch. No adipose tissue was present and the thickening extended from the middle of the third to the lower border of the fifth vertebra. It was evidently due to a hemorrhage which had become organized. The dura was found adherent to the cord, it was opened and the cord was seen to be more or less congested, the layer of connective tissue was removed and the dura loosely sutured. The wound was irrigated and partially closed by suture. Moderate shock and considerable pain followed. Elevation of temperature was very slight, and the wound healing was uneventful. On June 10, the patient noticed some improvement of the right hand, as he was able to clinch his fingers tightly and more motion could be made at the elbow. On June 26, improvement was very noticeable; even with his left hand he could pick up a handkerchief from the bed. Improvement of all the muscles was rapid and progressing so that on July 1 he was able to walk with slight support. On July 10, with the aid of a cane he was able to walk up and down the ward and could raise both arms to the top of his head. His pains have entirely disappeared as had also the muscular contractions. By the dynamometer his grip increased at the rate of three pounds a week. On August 8 he walked a mile and a half and could move arms and head freely. His head when raised could be held erect for a few minutes, but he still wore a jury-mast. On August 10 he went to a dime museum where he exhibited himself. In the following January he was able to cast aside his jury-mast. He could walk many miles a day without fatigue, and had almost perfect use of his hands and arms. In 1898, he in the meantime *having gone back to England*, wrote me a letter stating he was perfectly well.

Other cases of laminectomy performed by me are as follows:

Case 7.—Fracture of Tenth Dorsal Vertebra; Operation; Death in 2 months from Sepsis due to Bed-sores and Cystitis: J. H., male, aged 42, on the afternoon of June 20, 1891, fell from a height of 30 feet, struck on his back and became at once paralyzed below the waist line. On admission to the hospital two hours later, he was *suffering from considerable shock, temperature* 100.5, respiration 36, pulse 120. There was complete muscular paralysis below a line around the umbilicus. There was complete anesthesia below a line drawn around the crests of the ilium and above this a band three inches deep of diminished sensation. His reflexes, both deep and superficial, were abolished. Ankle clonus was present. Respiration was mainly thoracic and somewhat labored. *The eleventh dorsal spine was* prominent and seemed to deviate towards the left. At this point there was marked local tenderness. The bladder and rectum were paralyzed.

The diagnosis was made of fracture of the tenth or eleventh dorsal vertebra with a crush of the cord at this point. Immediate operation was advised but the patient refused to consent until June 27. *During this seven days' delay the patient lost* considerable strength, his temperature was elevated two or three degrees and a cystitis developed. On the 27, ether was administered. An incision was made from the tenth dorsal to the first lumbar spine. A fracture was found of the tenth dorsal spine running along the left lamina of the same vertebra. The lamina of the eleventh was also fractured. Several bony fragments, which had pressed upon the cord and lacerated the dura, were removed. The cord was contused and deeply congested but was not completely crushed. There was considerable inflammatory exudate between the dura and the cord. The wound was irrigated and partially sutured. Some shock followed but three days later the patient's condition seemed somewhat improved. The cystitis, however, continued and a sloughing bed-sore developed over the sacrum. Through the month of July there was gradual increase of the bed-sores, and a nephritis developed. He was free from pain and the wound healed by August 1. Soon after this he began to fail, and on August 22 he died from sepsis due to bed-sores and from uremia.

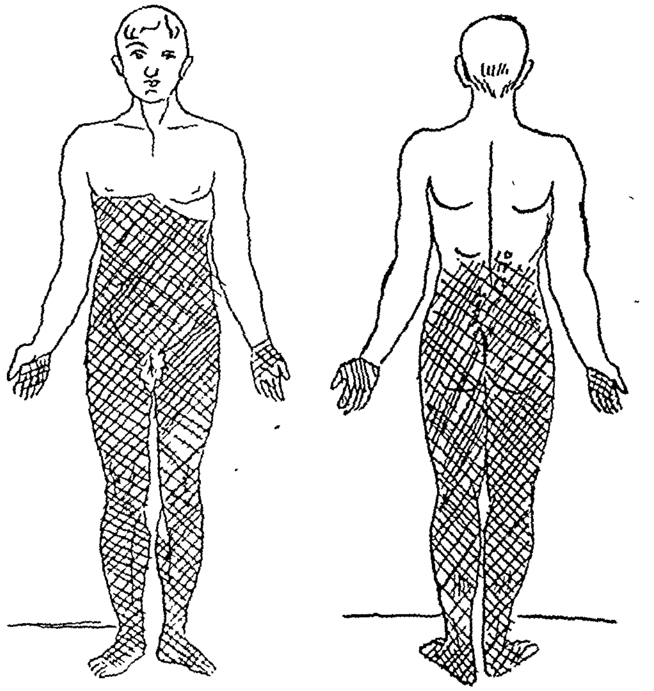
Case 8.—Fracture of Seventh Cervical Vertebra; Operation; Death: T. C., male, aged 41, fell while intoxicated on June 1, 1892, from a height of 8 feet and struck on his head and neck. He was unconscious for a few moments; paralysis of his lower extremities with anesthesia immediately developed. When admitted to the hospital *his general condition was good;* temperature 98, respiration 16, pulse 72. On examination there was complete motor and sensory paralysis from a line in front two inches above the nipples and extending laterally at about the level of the axillary artery. *The patella reflexes were completely lost;* no ankle clonus; no paralysis or anesthesia of the arms; priapism.

Operation six hours later. *An incision with its center over* the seventh cervical spine was made. The spine and arch of the seventh cervical vertebra were found fractured extensively. Several bony fragments were removed. The dura was torn. The cord was contused and congested but seemed intact. The probe passed three inches upward and downward felt no irregularity of bone. The wound was irrigated and partially sutured. *Very little shock followed the operation*, but the temperature gradually rose; the respiration became more embarrassed and he died at 6 a. m. on June 2.

Case 9.—Fracture of Third Cervical Vertebra; Laminectomy; Death: G. A., 65 years, on the afternoon of July 12, 1890, fell three stories, striking on his head and side. Shock was profound and breathing very much embarrassed, the extraordinary muscles of respiration being extensively used. On admission to the hospital at 2:30 p. m., his temperature was 97.5. For some hours there was no distinct evidence of paralysis. At about 6 p. m. it was noticed first in the muscles of the right leg and spread rapidly to the muscles of the entire body and extremities. At 9:30 p. m. the temperature was 103.5; *there was complete anesthesia below a line drawn through the nipples and also a band running down both arms. All reflexes* were entirely abolished. During the night, stupor developed and the temperature *rose to* 106. Operation was made at *1:30 p. m. on July 13. No anesthetic was employed.* An incision was made from the base of the skull to the seventh cervical spine. A comminuted fracture of the second spine and *lamina of the third was found.* Several bony fragments were removed. The right transverse process of the third vertebra was loose but was not disturbed. The dura was not opened. The operation had little effect on the patient. The stupor increased, the temperature rose to 109, the breathing became shallower and he died in twelve hours from respiratory failure.

Case 10.—Fracture of Cervical Vertebra; Laminectomy; *Failure to find seat of crushed Cord because of irregular Distribution of Paralysis:* M. M., female, aged 35, was, on September 27, when in the act of getting into a folding bed, struck by the upper erect portion falling against her back across the shoulders and pinning her down in a *doubled-up position*, where she remained for fifteen minutes before she was extricated. When found she was unable to move her trunk and her upper and lower extremities felt numb and powerless. Shortly afterwards there was complete paralysis of the lower extremities and she was *unable to close her fists. Retention of* urine and obstinate constipation followed. She suffered some pain in the back of her neck and shoulders but it was not severe She felt numbness *in the upper and lower extremities and* trunk. She was unable to move her arms and to flex, extend, and rotate the forearms. The bladder and rectum remained paralyzed.

She was admitted to the hospital three days later. She was a large fleshy woman in a fair general condition; mind clear. She complained of slight pain in the back of neck, of numbness and sensation of pins and needles all over the body. Motor paralysis was complete below the diaphragm. The diaphragm and intercostal muscles acted normally. There was partial paralysis of arms and shoulders, but she could move them slowly both in flexion and extension, which movements, however, were diminished at the elbow and absolutely lost at the wrist. *All reflexes below the waist line were abolished.* The eyes were normal. There was some pain and tenderness at the lower part of the back of the neck, but no irregularity of the



Case 10.

Patient has sensation of touch all over, but in shaded lines on trunk the sensations of pain, heat and cold are absent. Note the difference in hands.

Patient has sensation of touch all over, but in shaded lines on trunk the sensations of pain, heat and cold are absent. Note the difference in hands.

bony outline could be felt either in the throat or in the neck. There was no stiffness of the muscles of the neck.

The diagnosis of fracture dislocation in the neighborhood of the sixth or seventh cervical vertebra was made. The symptoms, both motor and sensory, seemed to point to the location of the injury, probably to a crush of the cord at a point between the sixth cervical and second dorsal vertebra.

As will be seen in the diagram there was an area of anesthesia on the hands but none on the arms.

Consent, however, could not be obtained to operation until October 5, when, with the aid of Schleich's infiltration method, with a few whiffs of chloroform, an incision six and a half inches long was made from the fourth cervical to the first dorsal spines. The spines and laminæ of the sixth and seventh cervical were removed. There were no evidences of hemorrhage or fractured bone. A probe passed four inches downward inside the spinal canal and one and a half inches upward met with no obstruction. The dura looked normal. It was opened but there was no evidence of injury to the cord; where it was exposed for three or four inches the dura was sutured and the external wound closed by suture with the exception of a narrow space for a gauze drain. Time of operation was 45 minutes.

No shock followed, but also no improvement. The temperature which before the operation had ranged between 98.5 and 101 now steadily rose, till on October 11 it reached 106. Extensive bed-sores with rapidly spreading sloughs developed on each buttock. The temperature continued to rise till on the 19th it reached 110, on which day she died.

At autopsy there was found to have been a complete separation between the fourth and fifth cervical vertebra where there evidently had been a dislocation which had immediately sprung back after crushing the cord opposite the interspace between the fourth and fifth cervical vertebra. For half an inch or so the cord at this point was disintegrated and running upward and downward from this point were degenerated nerve tracts. The distribution of nerves in this case was most peculiar. A more careful study of sections of the cord, etc., will be found in "Med. and Surg. Report of Presbyterian Hospital," New York. Vol. V.

In 159 cases collected by Lloyd there were 59 deaths following immediately after operation and 32 at a later period. The so-called operative mortality was 49.18 per cent. Of my own laminectomies in fractures of the spine, 6 in number, 2 have recovered and 4 have died.

(To be continued.)

THE GYNECOLOGIST AS CONSULTANT.*

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Since my audience to-day consists mainly of men in general practice, who have to deal with more common, though possibly sometimes fully as difficult, conditions, as those encountered by the specialists, I thought it would be well to touch briefly upon a subject which must interest all of us, and to suggest a few ideas upon which may be based a discussion which may serve to elucidate more freely certain points dealing with the relations of the gynecologist to the general practitioner, and show how one can help the other to their mutual advantage as well as to the best interests of the patient. I shall, therefore, deal briefly with the following questions: 1. What are the qualifications necessary to render a man fit to take up gynecology as a specialty? 2. When should his aid be sought by the general practitioner? 3. How can this aid be sought for and given without detriment to the general practitioner?

In the first place the gynecologist, no less than any other specialist, must have had a thorough, broad training and experience in general medicine and surgery before taking up his specialty. But just here—quoting from a paper written by me some time ago—I would say that the argument so often heard, that gynecology is only a branch of surgery, and that the general surgeon is therefore better equipped to operate upon diseased conditions of the reproductive organs than is the gynecologist, would not seem to be wholly logical. Although only a branch of general surgery, under the circumstances existing at the present day, gynecology presents such a wide and important field that it requires the entire attention of the man who intends to obtain the best possible results. It is true that no one should practice gynecology unless he has a thorough understanding of the principles of general surgery, and every surgeon should also have had a good laboratory training in bacteriology and pathology. As a consequence of such a deficiency in their training we too often find surgeons who have little or no appreciation of surgery except from a mechanical standpoint. Much still remains to be developed in gynecology, from the operative point of view as well as from the pathologic and bacteriologic sides of the question, and it will hardly be disputed that the gynecologist, all other things being equal, is better qualified to scientifically investigate the problems connected with his special branch than those who are able to devote only a part of their time to the subject. It is owing to the investigations of the gynecologist that pelvic surgery has reached the high plane that it holds to-day. To anyone familiar with the development of the various operative procedures that are carried out for pathologic lesions of the pelvis, it is readily apparent that the necessary technique has been evolved by the gynecologist and not by the general surgeon. In order to appreciate the present condition of affairs one has only to compare the results obtained by any well-known general surgeon with those of the gynecologist in the first rank in a similar line of work, both as to morbidity and mortality. Taken as a whole the evidence will be found to be strongly in favor of the gynecologist. That there really exists a wide difference between pelvic operations and those belonging to other parts of the body can be well seen by observing the methods of procedure of a general surgeon and those of a trained gynecologist when operating for pelvic inflammatory diseases.

Of course it is evident that the specialist should be as broad in his views as the general surgeon; and to be a good gynecologist nowadays demands the preliminary training of the general surgeon supplemented later by an especial study of the morbid conditions existing in certain parts of the body.

2. When should the aid of the gynecologist be sought by the general practitioner? Patients frequently come to the specialist who have been under the care of the general practitioner or general surgeon for varying periods of time, without having received any relief from the more or less expensive and more or less tedious treatment that has been carried out. Nor should these failures be a matter of surprise when we consider that the exact pathologic condition in not a few cases has been unrecognized, and that unless we start with the right diagnosis our treatment must always be vague and usually ineffectual. For the best interest, then,

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* Read before the North Central Ohio Medical Society, at Mansfield, March 29, 1901.

of all parties concerned, the family physician no less than the patient, it would seem advisable, whenever a patient presents symptoms that suggest some pelvic inflammatory disease, and no improvement has taken place after a reasonable length of time from the course of treatment that is being pursued, a pelvic examination should be carried out by one who devotes his whole time to dealing with pathologic conditions of the pelvic organs. If such a procedure were carried out more frequently I have no doubt that many patients would be relieved before the local condition has had time to become more or less chronic. Again, there is no doubt that as a consequence of such an examination made at an early date many a patient would be spared an unnecessary routine of local treatment. It is no rare experience to meet with a patient who has undergone a long course of treatment for a supposed displacement of the uterus, and in whom careful examination (under anesthesia if necessary) shows that the organ is in a normal position. It may be argued that such a finding does not necessarily cast doubt upon the correctness of the original diagnosis, but even the most experienced among us will not hesitate to confess, that it is often difficult to recognize the true position of the uterus in certain cases, and that it is still harder to put the organ in its normal position. Under these circumstances one can hardly avoid the conclusion that a considerable number of women are treated for imaginary malpositions of the uterus. Perhaps a brief report of a few cases will serve to demonstrate the importance of the early recognition of diseased pelvic conditions.

Case 1.—Chronic adherent Salpingitis and Ovaritis: Mrs. K. K., aged 25, married six years; occupation, seamstress, nullipara; one miscarriage five years ago at three months. Her menses first appeared when she was 13 years of age; they have always been regular and painless, but scanty. She has had a profuse leucorrheal discharge. She has been complaining for the past five years of a sharp pain with soreness in the right lower abdomen, which is increased on exertion. Five years ago she was in bed for two weeks on this account; the pain has been much worse during the past year. She has also had a great deal of backache. The family history has no special bearing on the case.

On examination of the pelvic organs the following notes were recorded: The vaginal outlet is relaxed, the cervix is in the axis of the vagina. The uterus is forwards, enlarged, sensitive but movable. On the right side an adherent tubo-ovarian mass can be made out. The left tube and ovary also seem to be adherent. After a careful examination under anesthesia the adherent tubes and ovaries and the vermiform appendix were removed. This patient had been under the care of a general practitioner for over a year. Twice weekly, she had received local treatment and medicine for which she paid three dollars a visit. Her income was five dollars a week. Finally, she lost all confidence in her medical adviser and came to our clinic. By the surgical procedures that were carried out she was entirely relieved, although her condition at the time of the operation was far from satisfactory, as in addition to the local condition she had developed markedly hysterical symptoms. When she came to us her resources were so reduced that she was willing to have the operation postponed until she could make money enough to pay her hospital expenses. One can not but believe that this patient's prolonged suffering and reduced financial condition were undoubtedly largely due to the fact that the local condition had not been recognized.

Case 2.—Cancer of the Cervix: A. G., aged 58, IV-para; oldest child 33, youngest 19. Menopause at 43 years of age. Two years ago a large amount of blood came from the vagina. The flow ceased, however, within a few hours and no vaginal examination was made. In August, 1900, she began to have attacks of slight bleeding from the vagina, and during the past month she has been passing small quantities of blood at intervals of every few days. The symptoms that she presented when she came under our notice were the bloody discharge from the vagina, with general asthenia. On examination the outlet was found somewhat contracted; the cervix was flush with the vagina, particularly on the right side; the tissue of the cervix was friable, and even gentle manipulation caused a profuse hemorrhage. The uterus was enlarged. After an anesthetic had been administered, on pelvic examination the uterus was found to be of about the size of that of a two months' pregnancy. The cervical canal was dilated, and several ounces of a muco-purulent fluid escaped. The cervix was then thoroughly curetted and cauterized, and the cervical lips were brought together with ligatures after packing the uterus with gauze. Vaginal hysterectomy was then performed. On the right side of the vaginal wall it was necessary to incise the wall well up into the lateral fornix in order to get beyond the infiltrated tissue. In doing this the ureter was tied on this side. The patient, however, made a practically uninterrupted convalescence. On the day after the operation she began to have considerable distress in the right iliac region, and at this time we could detect a resistant globular mass in this region. No urinary discharge occurred from the vagina at this time, and she was serceting from 36 to 56 ounces of urine daily. On the sixth day after the operation the urine began to come from the vagina; the tenderness in the right side disappeared, and the amount of urine passed from the bladder now materially decreased. We believe that we had to deal with a transient hydronephrosis as a result of the ligation of the ureter, but that an uretero-vaginal fistula occurred.[1] With this exception the convalescence has been normal and so far as we can ascertain at the present time there has been no recurrence of the disease. On examination of the mass which was removed, it was found to consist of the dilated uterine body—which was practically a pus sac—and the cervix uteri which was involved in the cancerous growth. Microscopic examination showed a squamous-celled carcinoma of the cervix.

If this case had been examined at the time when she had the first hemorrhage some two years ago, the condition would in all probability have been suspected. No examination, however, was made until a few weeks before she came under our care although there had been two or three evidences of a bloody discharge in a woman who had reached the menopause some fifteen years before. This is one of the many instances of this condition that are overlooked until it is too late to do much beyond giving the patient a lease of life and relieve her of some discomforts. Such cases should be a warning to all of us, to take nothing for granted when a patient is bleeding from the vagina, be it ever so slight in amount.

Case 3.—Extra-uterine Pregnancy: Mrs. M. S., aged 35, married, III-para; oldest child 10, youngest 6. One miscarriage, eleven years ago at three months. The patient had been well until she was suddenly seized with a severe pain in the left lower abdomen, which was accompanied with a feeling of faintness, cold sweats and a bloody discharge from the vagina. When I saw her some three hours after the beginning of the attack the abdomen was somewhat distended. On vaginal examination a fluctuating mass could be palpated in the left side of the pelvis. The expression was anxious, the pulse was 120. We concluded that she was suffering from a tubal pregnancy which had ruptured into the broad ligament. We watched the patient for the next few hours, and, as she gradually improved, we determined not to carry out any operative procedures at the moment, preferring to wait until she became stronger. After a week had elapsed she entered the hospital, and an abdominal section was performed. A considerable amount of free and clotted blood was found in the abdominal cavity; there was also a tubo-ovarian mass on the left side as large as the closed fist, which was undoubtedly the gestation sac. This was removed. The tube and ovary on the right side were adherent, and after enucleation they also were removed.

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[1] Careful examination failed to show any injury to the bladder. Three months following the operation the fistula closed.

The debris in the pelvis was wiped out and the abdomen was flushed with salt solution. We closed the abdomen without drainage after pouring into it 500 c.c. of a sterile salt solution. The patient made an uninterrupted convalescence. The microscopic examination confirmed the clinical diagnosis. This patient's condition had been early recognized by her attending physician, and he had at once sought additional help.

Such cases undoubtedly are frequently being met with by the general practitioner, in which the history is suggestive of an abortion or where the patient has missed several menstrual periods, and then suddenly has an attack similar to the one that we have just described. If such cases are examined at once and seen in consultation by a competent gynecologist, many lives would undoubtedly be saved by the immediate institution of the necessary operative procedures.

Case 4.—Double inflammatory disease of the Tubes and Ovaries with a sub-peritoneal Myoma of the Uterus: S. T., widow, aged 37, nullipara. For twenty years she has complained of a pain in the back, and for the past seventeen years, off and on, she has had a "neuralgic" pain in the left ovarian region. For five years she has had sharp pains at frequent intervals in the lower abdomen. During the past ten years she has had thirty attacks of pelvic peritonitis, which necessitated her staying in bed for from three days to two weeks at each attack. These attacks have become more severe during the last two years; the last one occurring in December, 1898. Three days prior to this attack I examined her and found a sub-peritoneal myoma as large as a fetal head. The small uterus could be made out beneath and attached to the myoma. The lateral structures were also adherent on either side. We advised that an examination be made under an anesthetic and the necessary operative procedures be carried out. The patient, however, would not give her consent. Three days later she had another attack of pelvic peritonitis. I attended her during this illness and after a two weeks' siege she recovered. She now concluded to submit to operative measures. On January 13, 1899, an operation was performed consisting of a myomectomy and a double salpingo-oöphorectomy, with removal of the vermiform appendix—which was slightly adherent—and the separation of many velamentous adhesions between the small and large intestines. The omentum was also adherent to the myomatous tumor and to the broad ligament. On the left side we had to deal with a hydrosalpinx and on the right a hematosalpinx. The lateral structures were released and removed after separating many strong adhesions. The patient made an uninterrupted convalescence and she is now well.

In all the years during which she had been suffering she had only been examined once or twice per vaginam prior to coming to us, and the physician had mistaken the myomatous tumor for the uterus. The only treatment that she had received was general massage, and a few applications of cotton tampons to the cul-de-sac. It seems hardly conceivable that such a condition of affairs could exist, and yet pass unnoticed, particularly as this woman had had so many attacks of pelvic peritonitis. Shortly before coming to us she had taken out a life insurance policy for $100,000, and I feel quite sure that no company would have been willing to have assumed this risk, if they could have known of the condition of the pelvic organs.

I could readily multiply these instances at great length, but I will not take up any more of your time by doing so. I am free to confess that the specialist makes mistakes, some of them grave, but one can not help but feel that in the very nature of things they must be rarer than those of the general practitioner whose attention from the study of special organs is so perpetually being distracted by his multifarious duties.

3. How can the general practitioner call in the aid of a specialist without detriment to his own interests and reputation? In the first place he can be assured that as a rule the patient will appraciate his efforts to do the best for her, whereas his mistakes and delays in calling in the aid of a specialist will be spread abroad by the patient, as soon as she discovers that other treatment might have proved beneficial long before. Loss of confidence in the family physician has far-reaching results and its effects can not be reckoned merely in dollars and cents. Secondly, it is easy for the general practitioner to guard his own interests by applying to a specialist, who is not only competent but who is a gentleman in the truest sense of the word. Again, often it will be found that no operative measures are necessary and in these cases the specialist will leave the patient in the care of her physician, and the latter can go on treating her with the full assurance that everything that is necessary is being done. As a specialist I can assure you that it is distasteful to me above all things to meet with patients who have lost all confidence in their family physician, especially when I see that the latter could have readily relieved himself of the responsibility without losing either in money or in professional reputation. One cannot but feel that the existence of full confidence between patient, family physician and specialist, is undoubtedly productive of the best results for all parties concerned.

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THE RATIONALE AND TECHNIC OF PNEUMATIC AURAL MASSAGE.

B. ALEX. RANDALL, M.A., M.D.

PHILADELPHIA.

The estimate of von Troeltsch that one-third of all adults are deaf in one or both ears has never been authoritatively questioned, and the extensive studies of school-children by Bezold and others have shown even in early life a serious loss in from 5 to 10 per cent. of all examined. As our clinical statistics prove that the great majority of these defects are due to impaired conducting apparatus and but a tithe to nerve-lesion, we are constantly facing the problem of how best to improve this conducting apparatus, both to check any progress of the defect and to regain, if possible, what has been lost. To this end the restoration of impaired mobility has long seemed a cardinal measure and hundreds of devices have been brought forward with more or less ardent claims as to their efficacy. The last word will not soon be said as to many of these, nor can any one man fully test them all; yet some twenty years of constant employment of various forms of massage has enabled me to form a fair opinion of the principles on which they must proceed and to recognize the fallacies which are too often presented in the advocacy of new candidates for acceptance.

Dealing with an apparatus essentially pneumatic, as is the middle ear, we naturally make most use of pneumatic massage for the desired mobilization; yet, just as the best efforts of the masseur upon stiffened joints elsewhere in the body are of slight avail in some cases until more radical surgical measures have broken up real or pseudo-anchylosis, so in the minuter field of the tympanum ruder means must at times have first employment. Cutting procedures should be resorted to only when the blunt force of probe and hook have failed; for the divided bands too often reunite into a worse hindrance than before. But the cotton-tipped probe can often do much to mobilize stiffened parts and rub in alterative ointments or solutions; and cases of long-standing post-suppurative deafness which had been abandoned by capable men as hopeless have years later been restored to a useful degree of hearing by gently vigorous massage of this sort. Lucae has obtained very good results with his spring-probe; but it is questionable how far its spring increases the efficiency in gentle hands or mitigates the rudeness of the clumsy. Usually painful, even after anesthesia has been attempted by ice or cocain, it can yet be borne by many patients, and will at times initiate an improvement which is unexpectedly marked as well as gratifying to the patient.

The various measures of pneumatic massage are likely to have the greatest vogue, however, both because of their gentleness, their wide range of applicability and their diagnostic value. Siegle's otoscope is the best, as it was also one of the first of these; although the dramatic value of electric or compressed-air manipulation will always appeal to some classes of patients and tempt the aurist who "must be up to date." Few modifications of the original apparatus have been for the better, except the substitution of a rubber bulb for the mouth-piece and lung power. Not only does this subserve convenience if the instrument is to be used by more than one person or in suppurative cases, but it materially increases its power, as is not infrequently desirable. A normal drumhead can bear a pressure of some fifteen pounds per square inch on either of its surfaces, and while this should rarely, if ever, be approximated in the practice of pneumatic massage, which has pathologic membranes to deal with, we may often need and use to advantage double the three or four pounds of negative or positive pressure which is the uttermost that the mouth can furnish. Siegle's fundamental principle, in which he advanced beyond his predecessors, must be adhered to—the variations of pressure should in almost all cases be made only in plain view; the massage must be made through an "otoscope"—and harm can then result from vigorous measures only in the most careless hands.

Injection of the manubrial plexus and other vascular areas must generally be induced by massage which is energetic enough to have any real efficacy; but this will usually be lost as quickly as it was evoked. The fear that is sometimes expressed that such injection will prove harmful by reason of exudation of leucocytes and increased sclerotic changes, is largely fanciful; such exudation need no more occur than extravasation. Either may readily absorb should it be produced, not only leaving behind no injurious trace, but really proving beneficial, by securing simultaneous absorption of previous exudates. All massage would fall under the same ban; but the oculist sees daily that corneal opacities can be best absorbed by massage with a stimulating ointment which shall cause not only marked injection, but actual new formation of vessels, thanks to which he secures absorption and replacing with better materials of the hasty repair-work which Nature had perpetrated. This is not so visible in other fields, but we know that it does take place; and the blood-count made after the general massage seance tells of a systemic plethora promptly induced, which is a large element of its usefulness.

It must be remembered, however, that in our aural massage the visible movements and injection of the drumhead are wholly secondary in importance to those induced upon the inner side of the tympanum. Much of the value of the procedure is in its mobilization of the stapes and to a less extent of the round-window membrane. Sometimes good motion of the malleus is obtained without improvement as to hearing or tinnitus, possibly because of laxity of the malleo-incudal or incudo-stapedial ligaments beyond the degree which Helmholtz pointed out as normal; but more often it is on account of anchylotic bands about the niches of the fenestra. At times such non-success is due to lack of air within the tympanum; for we must not forget that while we may speak of "sucking out the drumhead," in fact we merely permit the expansion of the air within by reducing the outside pressure. Tympanic inflation *per tubam* is therefore an absolute prerequisite in some cases, even some of those in which the slightest overdoing of inflation may be deleterious by concussion of a nervous apparatus already damaged by disease.

Besides the mechanical effect, then, of inflation and massage in mobilization, both measures can do good service through that very congestion which has been deprecated. The sclerotic tissues can at times be softened and stretched only after slight congestive exudation; and the cupping effect of the massage is no unmixed evil. It is a sharp-edged tool, not to be trifled with; but most surgeons ought to be able to trust themselves with keen instruments, if, indeed, such known potency for evil is not one of the surest incentives to safe and successful use. Measures supposedly harmless are usually but half-understood and perfunctorily used, and "didn't know it was loaded" applies to many things besides fire-arms. The blunt curette in removing cerumen and the forceps groping after foreign bodies are responsible for more injuries to the canal and deeper parts, with occasionally fatal results, than we ever like to believe. So we should study well during the massage, after it is finished, and at the next examination, with close inquiry as to the symptoms in the interval, if we are to know what we are doing for good or evil, and rightly to employ the massage for the benefit of the patient and the credit of ourselves and the profession.

As to the instrument, the original Siegle's otoscope has been little improved upon. It can be made of metal, with reduction of bulk and weight, and the speculum can advantageously be given the oval lumen, which best accords with the form of the canal—points which are well exemplified in Burnett's form of the instrument. The glass which closes the speculum externally may be plane or convex—the latter giving a valuably magnified image, but a proportionately reduced illumination. This matter of reduced light is cardinal and constitutes the great difficulty for beginners in using the instrument, especially if they are not accustomed to looking through the sight-hole of the brow-mirror. Much light is necessarily reflected from the glass, which is obliquely set so that this may not return to the observer's eye. Yet, many persist in staring at the reflection of the brow-mirror and so, not looking in the axis of the speculum, can see nothing else but its wall, instead of through into the ear. Of the light which does penetrate, only a fraction is reflected back from the fundus, and of this a further considerable portion is reflected internally, allowing but a small fraction to reach the eye. If the glass is convex, all of these losses are exaggerated and the resultant image, if enlarged two diameters, has but one-fourth the strength of illumination of the unmagnified view. Hence, there is need of precise adjustment of the light to secure the best possible illumination of the fundus before the speculum is introduced and of so holding the ear that one hand shall suffice for straightening and opening the canal and holding the speculum air-tight in place, while the other hand is free, first to manipulate the brow-mirror and make sure of the fullest lighting, and then to exercise through the bulb the precise suction and pressure desired. As with all other specula, the otoscope should be placed in the straightened canal and the ear drawn out over it as the speculum is pressed in.

Thus employed, the otoscope enables the physician to see exactly what he is doing, noting the response of the malleus-handle as well as of each part of the drumhead, flaccid or tense, to the variations of pressure. These can be made of any desired character by means of a good bulb, their frequency changing from twenty or thirty to three hundred to the minute, their amplitude equally diverse, while the pressure can be all positive or all negative, or alternations of each, with a maximum of nearly fifteen pounds in either direction, were such ever desired. No syringe or other form of "rarefacteur" can give more vigorous action nor allow such perfect control. The claim made for certain forms of massage-instrument that they *alone* can give some definite suction or pressure is wholly specious—any passable form of the apparatus can give a fair degree of either. It is urged as to some electric or other appliances that they give a definite rhythm not obtainable by hand-power; this is in a measure true and constitutes one of the advantages of the simpler apparatus, since such regularity of vibration is an element of decided danger, as is recognized in a hundred directions. Numerous devices embodying this rhythmic vibration have been proved seriously destructive of the vitality of nerves and other tissues—the electrically-moved tuning-fork will render cataractous the lenses of small animals kept near it—the electric plugger has been abandoned because it killed the dental pulp—and almost every form of "phono-massage" has proved damaging to the cases which at first seemed benefited by its employment. The faulty rhythm of the hand-masseur is therefore decidedly in its favor, and no mechanical device can compare in efficient control with the skilled hand guided by the intelligent eye. It has been shrewdly asked, whether this or that exploited apparatus was "as efficient under the table as on top"; certainly, the mental impression on the patient (surely not on the physician also) is no small part of the supposed potency of some of the "latest patterns."

Massage without ocular control is permissible only when the effect of the procedure has been well studied through the otoscope, and it has been proved harmless for the ear in question. Then, it may be given into the hands of the patient for frequent home-use as a valuable adjuvant to the more potent measures. For such employment there is some risk, however, in most of the "masseurs," such as that of Delstanche, as their cupping effect may be much over-done. "Finger-tip massage" can be used with hardly a possibility of mischief. the means is always at hand without cost, and it can be used inconspicuously anywhere at just the time when the need for it is felt. Hommel's "tragus-presse" can afford but little of the suction which is most useful to the depressed conducting apparatus; whereas the deeply-inserted finger can be withdrawn enough to notably rarefy the air and give the same alternations of suction and pressure which are most efficient under the otoscope. The hollowed palm placed over the auricle can in like manner exercise vigorous pneumatic massage. Other massage about the ear has been employed, most valuably that behind the ramus, which can slightly affect the deep-lying Eustachian tube; but it seems for this purpose inferior in value to vigorous gargling.

1717 Locust Street.

PERNICIOUS ANEMIA.

REPORT OF THE PROGRESS OF CASES PRESENTED TO THE ASSOCIATION IN 1900, AND REPORT OF A CASE WITH DIFFUSE SPINAL CORD LESIONS AND POST-MORTEM FINDINGS.*

FRANK BILLINGS, M.D.
CHICAGO.

(Concluded from page 488.)

Case 29.—This is an important and most instructive case, and is reported in detail with the postmortem findings, including a microscopic examination of the different tissues of the body.

Mrs. V. J.; aged 39; married; mother of four children; came to the Presbyterian Hospital, Chicago, on July 26, 1900. Her father is living, and has had stomach trouble a good deal of his life. Her mother died of paralysis. A maternal aunt died of cancer. There is one brother and seven sisters, all living and in good health. The patient has been obliged to work hard all her life, and has not been in good health since the birth of her last child. Two of her children are living and two are dead. One was still-born. The patient had typhoid fever when she was young, and suffered from malarial fever, as it was told her, two years ago. Her present illness began after the birth of her last child, seven years ago. There was indigestion, with gaseous eructations, acidity, fullness, and weight in the epigastrium after eating. Occasionally there was vomiting, but the vomiting had no relation to the meals. She never vomited blood. On several occasions she vomited bile after repeated attacks of vomiting. The appetite has been variable on the whole, but has been often good. There was diarrhea with watery stools containing undigested food for the first six years of her illness.

A years ago she commenced "christian science" treatment, and after six months the diarrhea ceased and she became much better. Recently there has been much irritation of the bladder, with a desire to urinate frequently. There has been a sense of pressure about the rectum, and at times some pain, especially if the bowels were constipated. There has been some difficulty in getting the bowels to move because of a sense of numbness in the rectum in the last few weeks. Menstruation ceased four months ago; the flow was scant for a month or two preceding the cessation. Her strength and endurance have been gradually lost. She was overworked during most of the illness, but her legs became finally so weak that she was obliged to remain in bed on and after December, 1899. She and her friends noticed that she was paler than usual, and that the skin had a yellowish tinge. This has increased since she has been in bed. She has noticed that her legs have become much weaker since she went to bed, and that she has not complete control of the bladder. The bowels have usually been constipated and required a laxative or the injection of water into the bowel to move them.

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* Read at the meeting of the Association of American Physicians, at Washington, D. C., April 29, 1901.

An examination showed a woman fairly well nourished; the skin was very pale and of a distinct yellowish tint. The mucous membranes of the lips and mouth were pale. The tongue was indented and furred. There were no carious teeth; the lungs were negative. The heart area was normal. There was a soft systolic blow in the mitral and pulmonic areas. The radial pulse was about 100 per minute, and was small and soft. There was diastasis of the recti abdominalis muscles. The belly was "pot-form." There was very palpable visceroptosis, including the liver, kidneys, spleen, intestines and stomach. The uterus was retroverted and moderately fixed. Some pain was caused by an attempt to restore it to the normal position. The body of the uterus was small, and a small nodule was felt in its posterior surface. The rectum was normal; the eye grounds were normal. The patient had abrasions of the skin over the sacrum, and lay partly upon the side with the thighs and legs flexed. There was some atrophy of the muscles of the lower extremities, chiefly of the extensor groups. The knee-jerk was increased. There was a slight ankle clonus, more marked in the left than in the right foot. Babinsky's sign was present in the right, but not in the left. Sensation was diminished in the lower extremities, most marked in the feet and legs, and almost normal in the thighs. The muscular sense was noticeably absent. The patient could perceive pain, and in certain areas of the leg could distinguish heat from cold, but in others heat was felt as pain and cold was felt as touch only. There was a small area in the left inguinal region and upon the outer surface of the right thigh, where tactile sense was diminished and heat was felt as pain. There was noticeable loss of power in the legs and thighs, which was more marked in the right than in the left. There was loss of power in the rectum and bladder. The muscular power and the sensation of the skin in the upper extremities seemed normal. She complained of a sense of constriction about the abdomen, beginning at the waist-line. The urine, with a specific gravity of 1012, was acid in reaction; no albumin nor sugar present, and was microscopically negative. The blood examination showed hemoglobin , 20 per cent., red cells, 610,000, and white cells, 3200 per cubic millimeter. Poikilocytosis was very marked, and nucleated red cells, with megaloblasts predominating, were found. (See Chart No 5.)

The patient remained in the hospital from that time until the date of her death on Feb. 27, 1901. During that time many blood examinations were made, as indicated in the accompanying chart, which showed two waves of improvement while under observation, and the death of the patient occurred during the last wave of improvement. The blood findings were all characteristic in every way of pernicious anemia. The interesting point in the case is the spinal cord involvement, which consisted of a paraparesis, noted at the time of admission, and which gradually increased up to the time of her death. There was finally complete paralysis of the bladder, and in consequence, an infection which extended to the kidney, and the patient died of septicemia dependent upon a pyelonephrosis. This was possibly aggravated by extensive bed-sores, which increased in extent and depth in spite of the greatest care.

The stomach contents were examined after test meals on several occasions, and hydrochloric acid was found absent in every instance. The stools were examined and found negative as to parasites. The urine, after the infection of the bladder, became alkaline; and contained considerable pus and many bacteria. The character of the bacterial infection was not discovered. During the greater part of the illness the temperature of the patient ran an irregular course of either a remittent or intermittent type, but it was never severe in degree. The pulse was usually rapid and small, and there was always a complaint of great weakness and of breathlessness upon exertion. The nourishment of the patient remained good throughout the whole illness. Her appetite was usually good, and although digestion was not perfect, assimilation of her food occurred. About the middle of January, 1901, the infection of the bladder and of the kidneys occurred, and from that time the patient suffered from an intermittent and remittent type of fever of severe degree, and at times was delirious, apparently from the fever. Five days before death the temperature fell below normal and remained so until death, and for two days preceding that occurrence it registered from 93 to 94 F. in the rectum. The pulse and respiration fell with the temperature, and the patient died with a very low tempera-

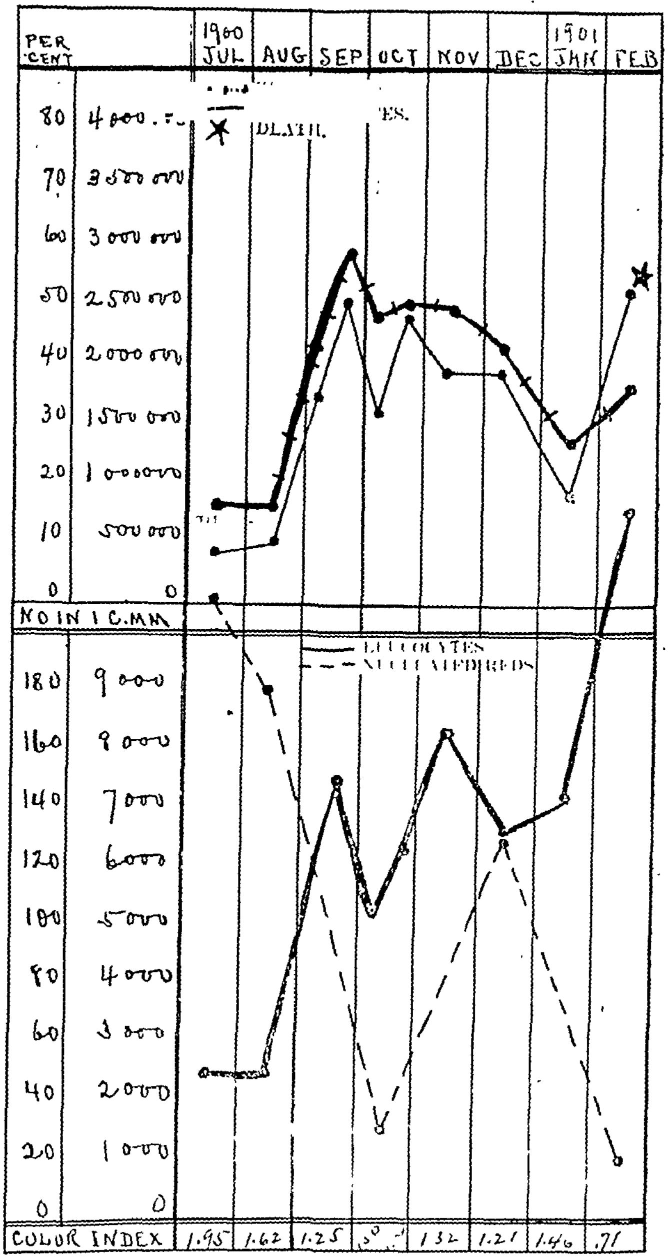

CHART 5.

ture, slow pulse and slow respiration. At the time of death the blood findings indicated a wave of improvement, and just at death there was a terminal leucocytosis.

The postmortem examination was made by Professor Hektoen, at the Presbyterian Hospital, on Feb. 27, 1901, when the following diagnosis was made: General anemia; red marrow in femur; splenic hyperplasia; degeneration of posterior columns of spinal cord; ascending cysto-uretero-pyelonephritis, with necrosis of the medullary papillæ; broncho-pneumonia; fatty liver; thrombosis, with softening of the inferior vena cava and continuation to the left in the renal vein; sclerosis of aorta; chronic pelvic peritonitis; with tubo-ovarian adhesions; extensive sacral decubitus, and edema of feet.

The body, which is still warm, is that of a rather middle-aged, poorly-nourished woman. There is no rigor mortis, and no posterior lividity. There are huge bed-sores with great undermining of the skin over the sacrum, exposing the coccyx and lower part of the sacrum and the left trochanter. The limbs are fixed, the knees somewhat flexed and the feet, especially the left one, slightly edematous. The sclerotic coats, especially that of the left eye, show traces of recent hemorrhage.

The abdominal cavity is empty, and peritoneum smooth. The pleural cavities are empty and smooth. The mucous membrane of the gums is intact. The tongue, in its anterior roof, shows branching fissures; its mucous membrane, as well as that of the pharynx, esophagus, larynx and trachea, is normal. Peribronchial glands are normal. The lungs are pinkish externally and but little pigmented; they are soft, spongy and crepitant. The cut surface is pinkish and bloodless. In the lower lobe of the right lung there are several areas of recent lobular consolidation, from which a thin, purulent fluid can be expressed. In this lobe the bronchi also contain muco-pus. In the upper lobe there are one or two small black, subpleural concrements. The heart weighs 250 grams. There is considerable amount of subepicardial fat. The cavities are somewhat dilated and contain a small amount of fluid blood; their walls are thin and flabby; the myocardium is normal. In the left ventricle there is an aberrant tendinous cord, which crosses the cavity in the lower half. There is no evidence of fatty degeneration in the myocardium. The beginning of the pulmonary artery is smooth. The right shows several yellowish areas, the largest one being in its descending portion. There is an obliterating thrombus of the inferior vena cava, beginning opposite the fourth lumbar vertebra and extending downward to the iliac veins and the right side into the femoral vein and its branches almost to the knee. The thrombus in the left iliac vein is red, in places grayish, with extensive puruloid softening.

The spleen weighs 350 grams; its external surface is smooth and of a slaty color; the capsule does not wrinkle. The cut surface is of true reddish-gray color; its consistence is quite firm; its connective tissue being visibly increased. The Malpighian bodies are not visible except in a few places.

The liver weighs 1800 grams. There are a few perihepatic adhesions binding it to the diaphragm. It is yellowish in color both externally and on the cut surface. On section the peripheral parts of the lobules appear much yellower than the central portions. The bile passages are patent. The gall-bladder contains a quantity of very thick, viscid, tarry bile, and a number of small faceted calculi.

The pancreas is normal in size and appears normal on its cut surface.

The stomach is small and contracted; its mucous membrane was not examined. The stomach was filled with formalin for histologic purposes. The mucous membrane of the small intestine is intact, and apparently not greatly atrophic; that of the large intestine and rectum is normal. The vermiform appendix is also normal.

The kidneys are enlarged, weighing together 520 grams. Their external surfaces, particularly that of the right, show roughening of the capsule, with yellowish spots, some of them purulent. The pelvis of each is filled with turbid, thick pus, in which there are many necrotic masses. The mucous membrane of the pelvis is thick and in places ulcerated and irregular. The apices of some of the medullary pyramids are distinctly necrotic, being capped by a yellowish, rather firmly adherent eschar. In some places this has fallen off, leaving ulcers. The calices appear dilated and lines of suppuration extend upward into the medullary pyramids and into the cortex. In the pelvis of the left kidney there is a firm, yellowish, adherent thrombus in the branches of the renal vein. The ureters are thickened and somewhat dilated; their mucous membrane is roughened and covered with pus. The urinary bladder is contracted and its walls thicker than normal. Its cavity contains a small quantity of turbid fluid. The mucosa is roughened and in places is diffusely red and hemorrhagic.

The right ovary and tube are small and shrunken and embedded in adhesions. There are adhesions about the left ovary and tube, among which there is quite a large collection of serous fluid. The uterus is about normal in size. Its mucous membrane is smooth. There is a bilateral, old cervical tear. The vagina is normal.

The skull and membranes of the brain are normal. There is an excess of cerebrospinal fluid; in the lower part of the spinal cord there are numerous minute, bony, white scales in the meshes of the pia arachnoid. The cord is about uniform in consistency throughout. On cut section there is distinct degeneration in the posterior internal columns. In the lower part of the cord this degenerated area becomes wider and more irregular.

The marrow of the left femur is deeply red throughout and quite cellular. Smears contain megaloblasts, normoblasts, etc.

Histologic examination was made by Mr. Robinson, in the laboratory of Prof. Ludvig Hektoen, and by Dr. J. F. Smith, of the House Staff of the Presbyterian Hospital.

Lungs.—Sections from the more solid portions of the lungs show marked degeneration; quite extensive destruction of the alveolar walls, with the alveolar spaces of the large portion of them completely filled by disintegrating leucocytes and a serous transudation. In the remaining part the consolidation is much less complete. The alveoli are occupied and the character of the material within them somewhat different, the serous portion being much more abundant and the leucocytes fewer in number. A considerable amount of blood can be seen along the lines of the broken alveolar walls in the denser portions of the sections. The smaller capillary vessels are also highly congested, and the larger vessels, whose walls show evidence of degeneration in their granular and fragmentary appearance, are distended with serous material.

Heart.—The muscular fibers under high power of the microscope present a peculiar appearance. Along the margins the protoplasm appears normal, with its transverse striations distinctly visible, while the central portion in many places is pale and degenerated and shows no transverse striations. This gives to the fibers somewhat the appearance of a separation into two longitudinal divisions. Many of the fibers show a longitudinal splitting into fine threads. The nuclei stain well, but the protoplasm throughout shows some irregularity on staining. Bands of light color cross the fibers transversely. Many of the nuclei are large and irregular.

Femoral Vein.—Sections of this vessel show the wall varying considerably in thickness in different portions, containing but a scant amount of muscular tissue. The lumen is occupied by a large mass of fibrin and disintegrated blood, the central part of which is less dense and more granular, being composed largely of degenerated cellular elements. Around the margins of the mass some evidence of proliferation of the fixed tissue cells is seen, and in a few places there are growths starting inward from the vessel wall. No bacteria can be found in sections stained by Gram's method.

Spleen.—The Malpighian bodies are very indistinct throughout the greater portion of the section, and in some places entirely invisible. The splenic tissue in all parts of the section obscured by the presence of an enormous amount of blood. The nuclei of the cells are visible, stained quite deeply, but their protoplasm is pale. The capsule of the organ is thickened and the connective tissue within is notably increased in amount, but it has a peculiar granular, disintegrated appearance, which is seen also in the walls of the vessels included within the larger trabeculæ. The blood vessels show some increase in thickness of their walls and lumens, in most instances engorged with blood. The elastic tissue fibers are much increased, as shown by Weigert's special stain.

Liver.—Sections of the liver show extensive fatty degeneration, particularly in the peripheral portion of the lobules, where the liver cells are almost entirely replaced by fat vacuoles. Only a very scanty amount of protoplasm and a few poorly stained nuclei remain. Immediately surrounding the central vein of the lobule there is, in most cases, a small area of liver tissue, almost free from fat, showing, however, evidences of degeneration by the dull color and granular character of its protoplasm and by the pale staining of the nuclei and the presence of some granular detritus in the spaces between the cell columns. The capsule of the organ is not thickened, nor is the interlobular connective tissue apparently increased in amount. The bile ducts are not proliferated. Some of them are large and have wide-open lumens. The blood-vessel walls show no particular changes; the lumens are occupied by varied amounts of true blood. Staining with ferrocyanid show small amounts of granular iron here and there in the interstitial tissues. Staining by Adami's carbolthionin method show many diplococcus-like bodies located within and between the liver cells.

Pancreas.—Sections of this organ stain well and show no apparent abnormality more than a congestion of some of the smaller blood vessels and perhaps a slight increase in the thickness of their walls. The lobules are distinctly marked off. Numerous bodies of Langerhans of various size are present throughout the section.

Stomach.—Sections of the fundal portion of the stomach show marked thinning of its wall, particularly of its mucous and muscular layers. The glands of the mucosa are few, shallow, and atypical and the epithelial cells of their lining are very indistinctly marked off and poorly stained. Round-cell infiltration is present. The submucous layer is comparatively thick. Most of its vessels are congested. The muscular layers are thin and pale. Practically the same may be said of sections very near the middle of the lesser curvature of the organ. Muscular tissue, however, is more abundant and the thickened vessel walls in the submucosa are more evident. In sections from near the pylorus atrophic changes are not seen. Mucosa is normal in thickness and appearance, and the muscular layers, white, dense and well stained. On the inner surface and in the lumens of the more superficial glands are seen bacterial colonies.

Intestines.—The intestinal tract in its upper portion, that is, the duodenum and jejuno-ileum, shows no marked pathological change. Walls of the ileum, particularly in the region of the cecum, are rather atrophic, especially its mucous layer, which in places is reduced to a narrow band, with but slight resemblance to mucosa. There is diffuse, round-celled infiltration of the mucosa. The submucosa, in places, is congested and edematous. Numerous mast-cells are seen in the submucous layer.

Kidneys.—Sections of the kidney show marked destructive changes toward the apices of the pyramids. The surface bordering on the pelvis is composed of typical granulation tissue infiltrated by large numbers of polymorphonuclear leucocytes. There is diffuse, almost universal, edema and leucocytic infiltration of the somewhat increased interstitial tissue and congestion of the capillary and larger vessels. Throughout the section are granular necrotic areas of variable size and minute abscesses. A large proportion of the tubules in both pyramidal and cortical portions are dilated and packed with masses of polymorphonuclear leucocytes embedded in a granular debris. In many places the cells have undergone complete necrosis, involving also the lining epithelium and peritubular connective tissue. The straight tubules, even where densely packed, often have an intact epithelium with clear nuclei. In others it is flattened, degenerate, or necrotic. The glomeruli have somewhat thickened capsules and are much congested. Others yet show carious degenerative changes, not a few being entirely necrotic and granular. In some places glomeruli and tubular contents have dropped away during the handling of the sections, leaving only the thickened connective tissue framework.

Spinal cord.—Sections of the cord, stained by the Weigert-Pal method, show degenerative changes, with absence of myelin sheaths from many of the tracts; at some levels comparatively few sheaths are present in any part of the transverse section, and their absence from the postero-median and crossed pyramidal tracts is more or less complete at all of the levels examined.

It was intended to give illustrations of sections of the spinal cord at different heights, to show the site of the degenerative changes in the cord. Sections made of the medulla and pons show degeneration of certain tracts here, as well as in the cord, and it therefore seems wiser to postpone the report upon the histology of the cord until a more extended examination may be made including the entire cerebrospinal system. This will be the subject of a future report to the Association.

The changes in the spinal cord in this case are the same, apparently, as those reported by others, and consist of degeneration in the postero-median, the pyramidal, the direct cerebellar and Gower's tracts. Diffuse degeneration appears in this case in the cervical and upper dorsal cord. It seems, therefore, in this case, that while the degenerative changes are limited to certain columns in some parts of the cord, especially in the lumbar, dorsal and upper cervical, it become more diffuse, as noted above, in other portions of the cord. One of the peculiar conditions noted is the absence of shrinkage in the degenerated tracts. Possibly this may be due to the shorter course of the disease as compared with the more chronic cord lesions of locomotor ataxia, lateral sclerosis, etc.

Bacteriological examination.—Media inoculated from the heart's blood showed no gross changes, either by aerobic or anerobic methods of cultivation. No cultures were obtained from the lungs. Upon an agar slant, inoculated at the autopsy from the thrombosed femoral vein, there developed a pure culture of the bacillus coli communis. Upon agar-agar plates from the liver there appeared a number of small, white colonies, composed of small cocci which, stained by Gram's method, produced a moist, whitish growth on glycerin agar, a dirty brownish-white growth, with discoloration, on potato, no apparent change in litmus milk, no gas in glucose agar, and no liquefaction of gelatin. From the kidney were obtained cultures of small cocci which, stained by Gram's method, and in subcultures, produced growths characteristic of staphylococcus albus; also small, bluish-white colonies of small oval bacilli, which were almost completely decolorized by Gram's method of staining, produced a scanty moist growth upon the surface of glycerin agar, a brownish growth with discoloration on potato, gas in glucose agar, apparently no alkalinity on litmus milk, and a funnel-shaped liquefaction of gelatin.

100 State Street.

NOTES ON ANESTHETICS.

D. H. GALLOWAY, M.D.

CHICAGO.

A man can not do two things at once so skilfully as he can do either one of them by itself. A surgeon can not do his most skilful operating while devoting half his attention to the anesthetic.

A surgeon is frequently more concerned about the result of the anesthetizer's work than he is about the results of his own work.

Constant anxiety about the anesthetic divides the attention of the surgeon between what he is doing and what some one else is doing and must hinder the progress of the operation.

In many cases more skill is required to administer the anesthetic than is required to do the operation.

An operation may be practically devoid of danger; an anesthetic is never administered without jeopardizing the life of the patient.

In more than half of the cases the patient is in greater danger from the anesthetic than he is from the operation.

A good anesthetizer need not necessarily be a good surgeon; neither are all surgeons good anesthetizers.

Death from an anesthetic may occur in the hands of the most skilful anesthetizer, but in the great majority of cases in which deaths have occurred the anesthetic has been in the hands of the unskilled.

The patient should not be brought profoundly under the influence of chloroform in less than five minutes; more than ten minutes is almost never required.

In administering chloroform there is seldom a stage of excitement except the patient is addicted to the use of alcohol, tobacco or some other drug.

The skilled anesthetizer seldom, if ever, touches the globe of the patient's eye with his fingers; it is unnecessary and may do much damage.

The anesthetizer should be considered a consultant to the surgeon, rather than his assistant; it is as important that he be an expert in the giving of anesthetics as that the surgeon be an expert in operating.

The surgeon can not do any operation of consequence and administer the anesthetic too; therefore, the patient should be made to understand that at least two men are required and that they are equally entitled to pay for their services.

The anesthetizer's fee should not be contingent on the surgeon's fee any more than the consultant's is, and, like the consultant, he should send a separate bill for his services.

The anesthetizer must not forget that the anesthetic is to be given on account of the necessity for surgical operation and that the reverse is never the case; hence, the anesthetizer's position is of necessity subordinate to that of the surgeon. As a rule the anesthetizer must use the anesthetic selected by the surgeon, though when anesthetics are administered only by skilled men it is probable that a selection of the anesthetic will be left to the anesthetizer.

No man can safely administer an anesthetic and watch the operation at the same time; if a death occurs while he is so engaged he should be held guilty of criminal carelessness.

During anesthesia the patient's life is in continual and imminent danger and his safety depends not only on the skill of the anesthetizer but also on that person's constant and undivided attention. The indifferent or inattentive person has no business with anesthetics.

Clinical Report.

CASE OF TUBAL PREGNANCY.

H. W. HENDRICKSON, M.D.

MONTEVIDEO, MINN.

On April 18, 1901, at 8:45 p. m., I was summoned to attend Mrs. E. P. H., whom I found in collapse, practically pulseless and suffering agonizing pain in the abdomen, especially in the right epigastric region where a large and hard swelling could be outlined.

A diagnosis was made of tubal pregnancy, with rupture and escape of the ovum, and hemorrhage into the peritoneal cavity. The gravity of the situation was at once explained to the family, and preparations made for immediate laparotomy.

At least a gallon of clotted blood was evacuated; a 12 weeks fetus with membranes was removed, the tube ligated and its distal portion with the ovary included detached and removed. The abdominal cavity was irrigated with a normal saline solution, and the wound closed without drainage, rigid asepsis having been observed throughout. Before the operation a hypodermoclysis of 3 pints of normal salt solution was administered, and a like amount was given after the operation was completed; the sites chosen were the cellular tissue under the breasts on both sides. The pulse just before the operation and after the first dose of saline solution had been given was 150 and very feeble. At 4 a. m. next day it was 140 and stronger, and at 10 a. m. 120 and fairly good. The woman made an uninterrupted recovery, and her temperature did not at any time show a rise of more than two degrees above the normal. The effect of the saline injection was very striking, and I am quite certain that but for its timely administration this patient would not have rallied from her double shock, namely, from the hemorrhage and subsequent operation.

Dr. Cabanes, of Paris, has offered to install and maintain a museum of retrospective medicine at the Paris Faculté de Médecine.

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TUBERCULOSIS AND HOUSE INFECTION.

The question of house infection by tuberculosis is a rather important subject, but one that heretofore has not been extensively studied in a statistical way. There has been an abundance of proof that invalids with the disease can temporarily infect their surroundings, and that dark and ill-ventilated tenements in the slums can retain the infection to all appearances. There have, however, so far as we are aware, been but very few exhaustive comparative studies of house infection under varying conditions as to sanitation; this alone can be considered a satisfactory method of investigation of this subject. What we want to know is not merely how far and how long tuberculosis germs can retain their vitality and virulence under specially favoring conditions, but how they exist and behave under ordinary and average ones, and also in those of better than average as regards general hygienic surroundings. A paper read at the late tuberculosis congress Dr. Harold Coates[1] deals with this subject somewhat in the desirable way, though the inquiry was limited in its scope. He divided the dwellings investigated into three classes: 1, those in a dirty condition, where careless consumptives lived, who took no precautions to prevent infection; 2, very clean houses occupied by rather careless consumptives using insufficient precautions as regards sputa, etc.; and 3, dirty houses where there had been no case of tuberculosis for years. In every case the condition was noted as to air space, light, ventilation, construction of walls and freedom from dust and dampness, presence or absence of carpets, curtains, etc., and length of residence of patient and duration of illness.

Twenty-one houses of the first class were examined. In 13 of these at least one animal was found tuberculous, and, in another, tubercle bacilli were found in the dust, making 14 out of 21, or 66 per cent., giving positive evidence of infection. In 7 houses there was no evidence that the dust was infective. In 8 of the 14 infected houses the lighting and ventilation were bad, in 1 fair, and in 5 good. In none of the 7 giving negative results was it poor or bad. Fifty-two guinea-pigs were inoculated with dust from these houses; 20 of these died shortly after being inoculated, 32 were killed four or five weeks after and 17 found to be tuberculous and 15 healthy.

Ten clean but infected houses were examined and infectious dust was found in 5. The average cubic air space in these, per individual, was 336 feet; in the other 5 it was 506 cubic feet. Of the infected houses only one had good light and ventilation, while these were good in all the non-infected houses. Ten dirty tenements without consumptive inmates were tested and in none was tuberculous dust obtained. Dust taken from the waiting-room of the out-patient department of the Manchester Hospital for Consumption, a lofty, well-lighted and ventilated hall used daily by 180 patients, was also tested, with negative result.

These results agree pretty closely with those of Cornet in Berlin, but are slightly more favorable. They point very strongly to the conclusion that the prime disinfectants for tuberculous germs are light and air, and that with free admission of these and proper care there is little danger of permanent infection of dwellings. They also demonstrate that without these, thorough cleanliness will not protect from infection from a careless expectorating consumptive. The particular danger of tuberculous houses is in the crowded districts of the cities, where light and ventilation are often apparently the last thing thought of in the construction of tenements, not only of the poor, but also those of the flat-dwelling middle class.

FUNCK'S SPORIDIUM VACCINALE.

The cause of smallpox and vaccinia has not been satisfactorily demonstrated as yet. The most recent investigations in this field are those of Funck, of Brussels, whose results have attracted considerable notice, the organisms described having been used by Gaylord, for instance, as prototypes of the protozoon of cancer that he claims to have discovered. Funck,[1] in his last article, attempts to show that he has fulfilled all the requirements necessary to prove that variola and vaccinia are caused by the same parasitic protozoon. In the first place he develops the fact that vaccine, at first usually rich in bacteria, eventually undergoes a process of self-sterilization, retaining, however, its power to produce typical vaccine pustules. Hence, he concludes that the active agent in vaccine lymph is probably not a bacterium.

This conclusion remains open to the criticism, however, that the active properties may be of bacterial origin. When lymph is examined microscopically in hanging-drop preparations mixed in bouillon certain cysts filled with spores as well as free spores are easily recognized at the bottom of the drop, whereas epithelial cells and cellular debris rise to the upper surface parts of the drop. The cysts are round or egg-shaped, 25 microns in average diameter, and the spores are from 1 to 3 microns in diameter and have ameboid movement. The cysts stain with sudan. Epithelial cells with parasitic inclusions are also seen. On account of the ease of observation and characteristic form, Funck finds it quite remarkable that these elements have not been recognized earlier and more generally. They were undoubtedly described by L. Pfeiffer in 1887 and by him referred to the sporozoa; for this reason Funck proposes the name sporidium vaccinale. In order to secure pure growths of the organisms, Funck spread sterile lymph in bouillon upon the surface of agar plates and after a time removed the cells which had risen to the surface of the drops; whereupon the cysts were fished out by means of a flattened platinum wire and mixed in broth. Inoculation of calves with this broth gave characteristic pustules and produced full immunity against ordinary vaccination. Funck claims that he thus secures the cause of vaccinia in pure form, but it is evident that he has not excluded, 1, organisms too small to be recognized, and 2, ferments and other substances that may be dissolved in the lymph and still carry the active properties. The bouillon emulsions of so-called cysts can not be regarded as the equivalent of pure cultures in the bacteriologic sense and capable of giving rise to innumerable subcultures by inoculation and multiplication. Funck found the same bodies in the pustules of variola and concludes that variola and vaccinia are both caused by sporidium vaccinale. Even from the purely morphologic standpoint it is probably rather doubtful if the bodies described by Funck are sufficiently characteristic to be regarded as other than the product of cellular degenerations and other lesions.

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[1] Med. Press and Circular, Aug. 7.

[1] Centralbl. f. Bakt., Abt. 1, 1901, xxix, 921-940.

GLOBULICIDAL ACTION OF URINE.

Laking of red corpuscles may occur from different causes. It takes place in solutions of less concentration —hypotonic—than the blood serum, and also under the influence of certain toxic substances no matter if the concentration of the fluid medium is quite the same as the blood serum—isotonic. It has been found that under certain conditions the urine may cause the laking of blood. This may be because the urine is hypotonic, but it may also depend upon other factors.

Indeed, there may be hemolytic substances in the urine which seem to be prevented from causing hemolysis because of the hypertonicity of the urine, as Hamburger and, following him, Camus and Pagniez,[1] showed by adding a few drops of urine to non-hemolytic solutions of sodium chlorid (0.66 to 0.70 per cent.) and mixing in a few drops of blood. After an hour or two in the incubator more or less laking may take place. Camus and Pagniez show that under these circumstances normal urine is hemolytic for the corpuscles of the rabbit, the hemolytic property disappearing, however, on alkalinization.

From their experiments it would seem that hippuric acid plays an important rôle in the laking of rabbit's blood by human urine. Under pathologic conditions neutral or alkaline urine may be globulicidal, and as this power generally diminishes on heating to 55 C. for some minutes it may be dependent on the passage into the urine of certain ferments or alexins from the serum of the blood. Generally human urine, although markedly globulicidal for rabbit's blood, is without effect upon human corpuscles. Occasionally, however, human urine lakes human blood. Ascoli,[1] and Camus and Pagniez have observed such instances, and at least in some cases the laking has been due to other causes than hypotonicity. This may explain certain cases of hemoglobinuria occurring without hemoglobinemia and of urinary origin. Camus and Pagniez cite the case of a chronic nephritic whose urine had a freezing point of 0.79 C. and which showed the spectoscopic bands of oxy-hemoglobin. The blood serum did not contain hemoglobin in solution, but the urine quickly laked corpuscles from the patient's blood. In this case the urine was distinctly hemolytic and thus caused laking of the blood which entered the urine at some point or other of the urinary tract.

GENERAL INFECTION WITH GONOCOCCUS.

Recent investigations with the aid of modern methods have shown conclusively that the gonococcus may invade the general circulation and cause an acute endocarditis, which usually assumes a malignant, destructive character. This demonstration, among many others one might cite, is an excellent illustration of the advantages that result from efforts to determine the exact nature of inflammatory and infectious processes by placing the diagnosis upon an etiologic basis. Our respect for the gonococcus and for vulgar gonorrhea has increased greatly since the pathogenic possibilities of micrococcus gonorrheæ have been shown to equal those of the most virulent of microbes. Recently, Prochaska has described additional cases of general gonococcal infection from Professor Eichhorst's clinic in Zurich.[2] In one case gonococci were demonstrated by microscopic and cultural methods in the endocardial vegetations of a young man in whom polyarthritis and acute aortic endocarditis developed soon after onset of an ordinary gonorrhea. In this case bacteriologic examination of the blood during life gave a negative result, but in two other instances of arthritis in the course of gonorrheal urethritis, both of which left the hospital greatly improved, cultures from the blood in ascites bouillon and ascites agar gave typical growths of gonococci. The use of several cubic centimeters of blood, drawn directly from the veins at the elbow and inoculated into large quantities of ascites bouillon is recommended as the surest method for obtaining positive results.

Wassermann[3] also demonstrated gonococci both morphologically and culturally in the endocardial vegetations of a fatal case of gonorrheal cystitis, prostatitis, nephritis and endocarditis. In the interests of a definite differential diagnosis upon an etiologic basis cultures from the blood should be made as indicated in all cases of gonorrhea complicated with joint inflammations and other clinical evidences of general infection. If practiced in the early stages this method will undoubtedly settle definitely the gonorrheal nature of many of the joint infections now regarded as gonococcal upon ordinary clinical evidence only.

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[1] Jour. de Phys. et de Path. Gen., 1901, III, 592-598.

[1] Clinica Medica, 1901, Jan. 9.

[2] Virchow's Archiv, 1901, clxiv, 492-506.

[3] Münch. Med. Wochenschr., 1901, No. 5.

JOURNAL OF MEDICAL RESEARCH.

The old *Journal of the Boston Society of Medical Sciences*, a high-class publication known to and duly appreciated by only a limited circle of the profession, has ceased to appear under its former too modest form, and comes out with a new title and a new dress. *The Journal of Medical Research* is a handsome octavo, well fitting the quality of the matter contained, and it will soon rank among the leading scientific medical publications of the world.

PECUNIARY VALUE OF A WOMAN'S LIFE.

Coming down to the question of a woman's relative worth in dollars and cents as compared to that of man's, the courts seem to give man the best of it. In our Medicolegal Department this week is recorded the decision of two state Supreme Courts which put a woman down as being worth but one-half as much as a man, by inference at least. It is generally accepted in all courts that a man's life is worth $5,000 at least, and this amount is usually given in a verdict for damages in case of death. But a court in Maine rendered a verdict of $3,500 in a case in which a woman's life was sacrificed, and the Supreme Court cut it down to $2,500. Likewise in New Jersey, the Supreme Court reduced a $5,000 verdict to $2,500. Hence, we presume a woman is hereafter to be considered worth $2,500, while her husband will bring twice that sum. If Mrs. Catt and her followers do not rise and indignantly protest, they certainly ought to do so.

DEATH CERTIFICATES AFTER QUACK TREATMENT.

If every death occurring under treatment by mental healers, "christian scientists," and other delusions and forms of quackery, was made a matter for a coroner's inquest and properly investigated, there would be fewer patrons of these humbugs. Too many physicians are sometimes good-natured and careless enough to give a postmortem diagnosis and death certificate in such cases, thereby directly aiding humbugs and frauds. A physician can not well refuse a call for help while life lasts, but this writing of death certificates upon the work of quacks is another matter. While such is sometimes unavoidable, there is no reason why any physician should step in and deliberately help out of his difficulties one who is not only hostile to rational medicine, but who is also in this regard a public enemy. An inquest is an unpleasant thing and trying to the feelings of an afflicted family, but if it would prevent their giving cause for it in future cases by employing Eddyites, Dowieites or quacks, it might be the greatest boon that could be conferred upon them. The matter is one in which the physician, called too late to aid the living, should consider his responsibility.

DIPLOMA MILLS.

The medical diploma green-goods men are still at work, though the notorious Armstrong and one or two others are out of the business, it is to be hoped permanently. The latest developments are the exposure of the Norton-Smith diploma mill in Jersey City and another similar one in Chicago, which dealt, however, more particularly in Divinity Doctorates, and the profitable existence of which is a scandal on the clergy, or those few of that profession who were morally and mentally weak enough to patronize it. Perhaps we might also note here some recent charges as to the dental diploma frauds, but that matter is not at present at a stage where one can speak positively as to the truth or otherwise of the allegations. As regards the New Jersey case there is little opportunity to doubt the fraudulent intent, the wording of the circulars and imitation-typewritten letters permits of no doubt. Through various correspondents and readers THE JOURNAL has been favored with samples of these, and some six weeks ago the editor called the attention of the postmaster-general to their character, which fact may have had its part in bringing about the present exposure. It is the easiest thing in the world to incorporate in some states a high-sounding, degree-giving, fraudulent concern, and these recent and earlier developments indicate that such foundations meet a felt want of a certain sort. There is scarcely any more evident fact than that quite a large proportion of mankind have an everlasting urgent hankering after handles or tail-pieces to their names, which shows itself all the way from the illicit adoption of the honorable title of Doctor down to the marriage of silly heiresses with impecunious fortune-hunting dukes, etc. Dr. Pangloss, LL. D., A. S. S., is very much to the fore, and his last degree is the fitting honorary one which should be given the patrons of these policy shops. It is a fortunate thing for the country at large that where state laws fail we have, in the postal statutes free from all constitutional limitations, a means of dealing justice in Federal courts to these impostors.

THE PHYSICAL EXAMINATION OF SCHOOL-TEACHERS.

A year ago the Chicago Board of Education, on the instigation of Dr. W. S. Christopher, a member of the Board at the time, adopted the plan of requiring all candidates for entrance to the Chicago Normal School, maintained by that Board, to pass a physical examination at the hands of a board of medical examiners, appointed and paid by the Board. As a result of one year's trial it is asserted by those who are in a position to know, that the physical improvement among the candidates is noticeable and fully bears out the claims made by those who proposed the innovation. As one of the examining physicians puts it: "It shows that in one short year the effect of the plan has been to arouse the young women to the necessity of care for their health. Knowing that this examination was coming, these girls have taken care of themselves. They have had soup for lunch instead of a few cookies. They have not dieted, as they used to, on slate pencils and pickles." The advisability of employing as teachers only those who are in good physical condition is certainly recognized by all physicians. And this year the Board has extended the examination to graduates of the Normal School, and all others applying for certificates to teach in the Chicago schools. The teacher who is suffering, weak or afflicted with any bodily ailment that lowers the tone of the system will become nervous, peevish, irritable and impatient, in spite of all efforts to avoid it, which is the very opposite to the condition one should be in who has under her control the young and impressionable. In providing for the qualifications of women who have to assume the important work of molding the plastic minds of children, small attention has been given to the physical condition, and yet it is much more important than many of the literary qualifications that are required, especially when we consider that patience, forbearance, leniency and a cheerful disposition are so essential in a schoolroom. But the application of a physical test to all young women who desire to teach, granting certificates only to those who can pass such a test, would be a blessing to them also. Many a woman has been made a permanent physical wreck in the schoolroom, usually because physical defects existed when she entered. For the sake of the future of both the teacher and of the children let the first qualification required of the former be a healthy body.

EXAMINATION IN MEDICINE IN NEW YORK.

A few weeks ago the Regents of the University of the State of New York, who have the supervision and control of medical qualifications in that State, adopted a rule that students who had passed the entrance examinations and completed two courses of not less than nine months, each could pass their final examination in chemistry, anatomy, physiology and hygiene. Having passed this they would be given a certificate to apply on their final examination as regards these branches. This would enable them to devote themselves more fully to the other branches of their medical course for their last two years and thus better fit themselves for their final examination. This was considered to afford a decided advantage to the New York medical schools, and while one or two details were criticised, it was welcomed as a very acceptable change. The Regents, however, appear to have a doubt whether in this preliminary pass examination there might not be a possibility of lowering the grade of medical education, and, according to the press reports, they have, by a recent ruling, made it impossible for anyone under 21 to be admitted to the preliminary examination. This, it is said, will rule out one-half of the students otherwise eligible, and, according to the reports, the medical colleges in the State are about to use all their influence for the abrogation of the rule. We were not before aware of this large proportion of immaturity in the New York undergraduates, and the rule seems on the whole a very judicious one. While there are exceptions, the very youthful medical student has had too little time to acquire the preliminary education or the mental maturity to fit him for serious professional studies, and it would be well for the profession if such a rule or one closely corresponding to that made by the Regents were generally adopted. As we understand it, they have only made 21 the limit for students finishing their second year, which ought not to be a very serious hardship. Medical students in their "teens" are too often, if not as a rule, too precocious for their own good and that of others, and we trust, therefore, that the ruling will not be changed. If New York students are so largely still under age, it will do them little harm to wait.

Medical News.

ALABAMA.

Dr. John W. Barclay, Birmingham, was seriously injured in a runaway a short time ago. His arm was broken and he sustained severe contusions.

The Alabama Brice Insane Hospital, Tuscaloosa, now contains 1670 patients, 1209 of whom are white, and 461 colored. The colored patients are to be removed in a short time to the new hospital at Mount Vernon.

Want Their Own Physician.—There is prospect of trouble at the Warner coal mines of the Republic Iron and Steel Company because the men desire a physician agreeable to them, and the company is so far non-committal in this particular.

The New Hillman Hospital, Birmingham, is to be located at 20th street and Avenue F. The contract for the erection of the building was let on August 26. It is to be four stories in height, and the contract calls for its completion within four months.

CALIFORNIA.

Dr. H. Isaac Jones, San Francisco, will be absent in Europe for one year.

Dr. John G. Berneike has been elected health officer of Santa Ana, vice George W. Minter, resigned.

Dr. Curtis H. Castle, Merced, has sold his practice and will take a tour in Central America, after which he expects to practice in San Francisco.

Apply for Licenses.—Since the new law went into effect, 6725 applications to practice have been received by the State Board of Medical Examiners, only about one-third of which were made by residents of the state.

The Berkley Hospital Association has secured plans and a site, and is now ready to begin construction. The building is to cost $15,000, and will have an initial capacity of 20 beds. It is planned eventually to enlarge the building so that it will accommodate 100 patients.

DISTRICT OF COLUMBIA.

Dr. Austin M. Curtis, surgeon-in-chief of the Freedmen's Hospital, Washington, has tendered his resignation.

New Licenses.—Of the 27 applicants for license who were examined in July, all but three passed the examination of the Board of Medical Supervisors.

Casualty Hospital Report.—The annual report of this hospital shows that 173 cases were treated in its wards, 933 operations performed, and 1276 emergency cases cared for. The directors decided to equip a new room for the reception of emergency cases.

Natural Healer Fined.—A 30-year-old banana dealer was fined $50 in Washington, August 17, for practicing medicine without a license. He admitted that he was not a graduate, but claimed immunity because he charged no fee for diagnosis, and only took pay for the medicines furnished.

GEORGIA.

Dr. Olin H. Weaver, Macon, has been appointed major and surgeon in the National Guard, and assigned to the Second Georgia Infantry.

The Atlanta Society of Medicine, through its attorneys, has filed an answer to the $10,000 damage suit brought against it by Dr. Bryan. The answer sets forth that the committee of the Society "did undertake in good faith and without malice to ascertain who were illegal practitioners, and to that end instituted a diligent search through the recognized city directories of Atlanta, through investigating signs and names upon office doors, advertisements and the like, to ascertain who were holding themselves out as practicing medicine, and when a list of the persons so holding themselves out had been obtained, the committee then, in good faith and without malice, compared these names with the names of those physicians who were registered according to law."

ILLINOIS.

Fire Loss.—Dr. E. P. Sloan, Danvers, lost his house by fire, August 20. The loss was $600, fully covered by insurance.

Evanston Hospital.—The new addition to this hospital will be completed in October. It includes a ward each for men, women and children. nurses' quarters, servants' rooms and a ward for special cases.

Lightning Interferes with Operation.—During an operation for an abdominal tumor at the Sherman Hospital, Elgin, the operator, assistants and nurses were surrounded by falling glass. Lightning struck the cupola of the building and shattered the skylight over the operating-room.

Hospital Employes' Pay Raised.—The directors of the Illinois Eastern Hospital for the Insane have adopted a scale of wages which will affect 500 employes. The initial salary for male attendants will be $25 instead of $18; for female attendants, $18 instead of $14; and attendants in charge of wards, $42 instead of $35.

Sherman Hospital Advisory Board Resigns.—The Advisory Committee of Physicans to Sherman Hospital, Elgin, composed of Drs. James A. Rutledge, William C. Bridge and Leonard S. Taylor, has resigned. This is another step in the conflict which has been precipitated by the efforts of the Elgin Woman's Club to dominate the medical staff and conduct the hospital after methods of its own devising.

Personal.—Dr. George E. Clement, Springfield, formerly assistant to Dr. George N. Kreider, has gone to Peru, Ind., as surgeon of the Wabash Hospital in that city.——Dr. P. H. McRaven has resigned as superintendent of the Cobden Hospital.——Dr. Leonard A. Robison and family, Canton, have returned from an extended eastern trip.——Dr. Frank Anthony, Sterling, is now securely convalescent and expects to resume practice this week.——Drs. J. H. Finch and Jess A. Fullenwider, Champaign, returned from an eastern trip, August 20.——Dr. Roy B. Roberts, Brooklyn, has moved to Augusta.——Dr. Henry W. Vanderhoof, Wheaton, has been appointed physician to the Du Page County Farm.——Dr. Thomas W. Keys, Leroy, returned from a trip to England, August 19.

Chicago.

The Graduate Nurses' Association of the State of Illinois, Chicago, was incorporated, August 22, by Harriett A. Fulmer, Emilie Lutz and Marie L. Cuthbertson.

Unlicensed Practitioner Indicted.—The State Board of Health has brought action against a chiropodist and magnetic healer of West Madison street, charging her with practicing medicine without a license.

Chicago Death Rate.—For the week ended August 24, the annual death rate was 15.57 per 1000. Of the 526 deaths reported 146 were from acute intestinal disease; 43 from tuberculosis, and 32 each from pneumonia and violence.

"Christian Science" vs. Typhoid.—On August 26 a young girl died from typhoid fever. She had been under the care of a regular practitioner and had improved. The doctor was accordingly dismissed and a "christian scientist" called in. The child grew worse and died while the "scientist" was reading to her. The physician who had been dismissed very properly refused to issue a death certificate and the case is now in the coroner's hands.

No New Smallpox Cases.—For the first time since January 1 *no new* case of smallpox was discovered last week and there are but two cases remaining in the Isolation Hospital, four having been discharged during the week. Notwithstanding the alarm concerning scarlet fever and diphtheria in certain quarters there are no new infected areas and the preventive measures being enforced are relied on to restrict further spread in the localities heretofore reported.

Personal.—Dr. and Mrs. C. St. Clair Drake left for a trip to eastern resorts, August 20.——Dr. W. X. Sudduth has returned from his summer vacation.——Health Commissioner Dr. Arthur R. Reynolds reached Chicago, from Europe, August 27.——Dr. Hugh Upton had several ribs fractured and was injured internally in a runaway accident at San Bernardino, Cal., August 25.——Dr. George Morgenthau is spending his vacation in Colorado and will return September 9.

Food Values.—It is announced that professors of Rush Medical College are planning a series of experiments to determine the effects of different foods upon the mental power of individuals. They will experiment for the most part upon students of the Chicago Hospital School, 5401 Drexel avenue, which has been recently affiliated with Rush. The students of this school, which has a large number of defective children, will be divided into classes and restricted to a particular diet for a certain length of time, until the effects can be noted.

Typhoid Investigation.—At the close of last week the investigation of 67 out of the 123 fatal cases of typhoid fever reported to the Bureau of Vital Statistics between July 1 and August 24 had been completed by the volunteer medical inspectors under the direction of Dr. John C. Neely, assistant chief medical inspector. Of these 67 cases 11 were found to have been undoubtedly contracted outside of the city, and 2 others were doubtful. This proportion agrees very closely with the results of previous investigations, to-wit, that about 18 per cent. of the fatal cases of typhoid in Chicago are contracted elsewhere and are not due to local causes. Among the remaining 54 deaths referred to typhoid fever 9 were clearly caused by other diseases and, in the opinion of the investigators, 6 others were doubtful. Including these 6, however, as among the typhoid deaths the investigators attribute the following as causes of the disease: "bathing in the lake," 2; "eating raw vegetables," 2; "drinking untreated hydrant water," 37; and for the remaining four out of the total 45 cases no cause is assigned. Dr. Neely says: "In this investigation particular attention was paid to the milk and ice supply. Three different milk dealers each furnished milk to two of the homes where deaths occurred, and one other to three of the homes. Ice was furnished to three families by two firms and to two families by another firm. So far as can be learned no connection can be established between the homes supplied with milk and ice by these firms."

Menace From Smallpox.—The July issue of the Bulletin of the Department of Health reproduces Dr. Spalding's article on smallpox which appeared in The Journal of August 3, and urges preventive measures. An increase of more than 87 per cent. in the number of smallpox cases—from 2566 to 4816—was reported to the surgeon general of the United States Marine Hospital Service, between June 28, 1901, and July 26, 1901, over the number reported during the corresponding period of 1900. Since the first of the year and up to the end of July there have been a total of 35,526 cases reported, as against a total of 15,132 cases during the corresponding period last year—an increase of 134 per cent. in this, the fourth year of an actual smallpox epidemic. Dr. Spalding's paper should set at rest any doubt as to the nature of the disease. As he points out, mild and irregular as the majority of the cases are, they still are capable of conveying to the unvaccinated typical, confluent and hemorrhagic forms of smallpox. That the disease thus far has been mild in character and the death-rate phenomenally low is no guarantee that it will so continue. In 1898 scarlet fever was endemic throughout all parts of Chicago, but the type of the disease was so mild that the scarlatina mortality of that year formed but 0.29 per cent. of the total mortality, while, for the forty-eight years, 1851-1898, inclusive, the proportion was 3.11 per cent. Towards the close of the year the type of the disease suddenly changed to one of great malignity, and during the following year, 1899, there were 533 deaths from scarlet fever, or 2.08 per cent. of the total mortality as against the 67 deaths and 0.29 per cent. of the total mortality of 1898. Epidemiology does not yet explain the causes of these changes in type; it only recognizes the fact of their occurrence. Such a change seems now impending as to smallpox. The death-rate in July, 1900, was 1.6 per cent.; during July, 1901. it has been 2.7 per cent.—an increase of nearly 69 per cent. The very mildness of the cases and the low mortality rate constitute a serious menace which should not be overlooked by the sanitarian and health authority. This menace lies in the fact that thousands of undetected cases have spread the contagion in unsuspected ways and places; that, in consequence, no disinfection or other restrictive measures have been employed; and that, therefore, there is every probability of outbreaks from undiscoverable sources in the future. The only and sufficient safeguard against this hidden danger is general vaccination. As has been before said in the Department Bulletins: "No degree of personal cleanliness or of municipal sanitation will protect the susceptible against contracting smallpox if exposed to its contagion. The one certain and only safeguard, tested and proven by the experience of a century, is effective vaccination."

INDIANA.

Dr. William Metz, physician to the Wabash Railway Employes' Hospital, Peru, has been transferred to the hospital at Ashley, Ill.

Elkhart has another case of smallpox with eleven known to have been exposed to the disease at that place, and an unknown number at New Carlisle, at Three Rivers, Mich., and on trains.

The Work House Hospital.—The new hospital at the Marion County Work House, which has been erected at a cost of about $25,000, was opened August 12. The male department will accommodate 8, and the female department, 5 patients.

Mortality in Indiana.—The monthly reports to the State Board of Health show that there were 3162 deaths in the state in July, equivalent to an annual death-rate of 14.8 per 1000. For the corresponding month of 1900 the number of deaths was 2255, a rate of 10.4 per 1000. The number of deaths under one year of age was 698, or 22.0 per cent. of the total number. From one to five inclusive, there were 307 deaths, which is 10.1 per cent. of the total, and of those who were 65 and over, there were 680 deaths, or 22.3 per cent. of the total. The urban deaths numbered 1259—an annual rate of 17.5 per 1000. The rural deaths numbered 1903, a rate of 13.4. Important causes of death were—tuberculosis, 382; typhoid fever, 77; diphtheria, 14; scarlet fever, 5; pneumonia, 53; diarrheal diseases under five years of age, 454; measles, 11; whooping cough, 15. Of the diarrheal diseases 105 were from dysentery.

IOWA.

Dr. James C. Davies, Emmetsburg, has sold his residence and practice to Dr. Horace W. Burnard of Chicago.

New Practitioners.—The State Board of Medical Examiners granted certificates, on August 16, to 64 of the applicants recently examined.

Neglect to Report Smallpox.—City Physician Nicholas J. Schlitz of Des Moines has filed charges with the State Board of Health that Dr. Frank O. Broady had neglected to report to the city board of health two or three cases of smallpox, and has asked that his certificate to practice be revoked. Dr. Broady insists that the symptoms of smallpox were wanting in these cases.

Osteopathic Litigation.—The S. S. Still college of osteopathy of Des Moines has filed in the federal court for the eastern district of Missouri a suit against an organization known as the Associated Colleges of Osteopathy, composed of the American School of Osteopathy at Kirksville, Mo., Bolle's Institute of Osteopathy of Colorado, Boston Institute of Osteopathy of Massachusetts, Northern Institute of Osteopathy of Minnesota, the Philadelphia School of Osteopathy of Pennsylvania and the Southern School of Osteopathy of Kentucky, demanding reinstatement in the association and $5,000 from each of the defendants, who, it claims, at the annual meeting at Kirksville, on July 5, illegally ousted it from membership.

KANSAS.

Registration.—Up to the first of August about 2000 of the estimated 3000 physicians of Kansas had registered. The time for registration of physicians with diplomas expires September 1.

From the Far East.—A Chinese physician of Leavenworth has presented for the inspection of the State Board of Medical Examiners a Chinese diploma, and demands a certificate to practice. Atchison is to have a Japanese physician, a graduate of Illinois Medical College.

The Department of Medicine of the University of Kansas, at Lawrence, has been admitted to membership in the Association of American Medical Colleges, and its course has been approved by the Illinois State Board of Health. The curriculum includes the studies of the first two years at medical colleges and the certificate of the university will admit the student to the third year in any medical college in the Association.

MARYLAND.

Change in Computing Death Rate.—The Health Department has recently made an important change in the method of computing the death-rate. Hereafter the calculations will be based on an estimated population of 518,000, viz., 439,000 white, and 79,000 colored, instead of 541,000. The annual death-rate on this basis for the week ended August 17, was 21.88, and for the following week, 20.38.

Personal.—Dr. W. H. Smith of the University of Maryland staff is at Queenstown.—Dr. Edward A. Schutz has returned from a trip to the Holy Land and Germany.—Dr. John Turner has returned from Nova Scotia.—Assistant Health Commissioner Jones has returned from New York.—Dr. William Lee Howard is cruising in his new yacht along the shores of the Azores.—Dr. Robert P. Winterode, pathologist at the Maryland Hospital for the Insane, Spring Grove, is ill at the Johns Hopkins Hospital with typhoid fever.—Dr. Joseph C. A. Wunder is at St. Joseph's Hospital with appendicitis.—Dr. T. J. Ward has returned from the Pacific Coast.—Dr. Ferdinand Groshans has gone to Buffalo.—Dr. A. Douglas McConachie left for Buffalo and Canada.—Dr. T. L. Richardson has gone to Buffalo and Canada.—Dr. James Bosley, health commissioner, is at Cape May.—Dr. J. W. C. Cuddy is at Atlantic City and will go to the Buffalo Exposition before returning.

Typhoid in Baltimore.—Of the 36 cities of the United States with 100,000 or more population Baltimore ranks thirty-first in point of health, according to census figures. The health officials attribute much of the typhoid fever to the unfiltered water and call for a filtration plant as an essential to health. The water board on the other hand says that it is unnecessary; that every case of typhoid is closely watched by the inspectors, the drainage of the house changed if necessary and every precaution taken to prevent the drainage from going into the lake. To show that the water is not polluted the following analysis by the chemists is published: Color, yellowish, turbid; odor, none; reaction, neutral; total residue at 230 F., 98; volatile residue, 28; ignited residue, 70; amount of chlorin, 2.74; amount of nitrogen as free ammonia, .024; amount of nitrogen as albumin and ammonia, .128; amount of nitrogen as nitrates, .96; character of water, good; nitrates, none. The Health Department will have elaborate examinations of the water made.

MINNESOTA.

Dr. Frank E. Bissell, Litchfield, succeeds Dr. O. S. Pine as surgeon at the Soldiers' Home, September 1.

St. Paul Hospitals.—St. Paul now has four well-equipped hospitals. A fifth, the Norwegian Hospital, will be opened October 1, and within a year a German Lutheran Hospital and a hospital built and operated by prominent physicians for private patients only, will be ready to receive patients.

Less Smallpox.—Smallpox in the state has decreased about 40 per cent. The number of new cases reported since August 1 is 126, against 239 for the two previous weeks. But one death occurred. The largest number of cases reported was in Washington County. Oneka township, where the State Board of Health has intervened to enforce quarantine, has 24 out of a total of 26 cases; Stillwater has the other two.

NEW JERSEY.

Newark School Inspection.—The Newark Board of Health and Board of Education, at a joint meeting, have decided to employ 12 physicians as public school inspectors at a salary of about $250, to make daily inspections of the schools and school children of the city.

Trenton Hospital Scandal.—An investigation into the charge of murder of a patient at the State Hospital for the Insane by attendants, and of inhuman and brutal treatment of other patients by attendants, is being conducted under the personal supervision of Governor Voorhees.

Medical Library in Trenton.—In the interests of the medical department which the physicians of Trenton desire to add to the public library, Dr. Charles Perry Fisher, librarian of the College of Physicians, Philadelphia, delivered a lecture to the medical profession of Trenton, August 22.

Doctor's Bill a Preferred Claim.—Whether a physician's bill should be a preferred claim against an estate has been decided in Camden by Judge Armstrong when he made an order entering Dr. E. L. B. Godfrey's bill of $349 against the estate of Caroline Cooper as one to be preferred above others in the settlement of the estate.

NEW YORK.

The remains of Dr. James Stoughton, U. S. Navy, who was drowned in Chinese waters last year, were interred, August 20, at the Albany Rural Cemetery.

The new hospital at Fort Ontario, Oswego, was accepted by Major Martin, of the army, August 15, and the keys turned over to the hospital steward, who occupies the second floor as his residence.

Smallpox on Excursion Boat.—The discovery of a case of smallpox on an excursion boat between Oswego and Alexandria Bay, August 25, created a panic on board. The patient on his return to Oswego was isolated at the Oswego Hospital.

Two State Societies to Meet.—The New York State Medical Association will meet at the Academy of Medicine, New York City, under the presidency of Dr. John A. Wyeth, October 21 to 24, inclusive. The Medical Society of the State of New York will convene in New York City, the week previous.

Buffalo.

The medical department of the University of Buffalo will begin the session of 1901-02, Monday, September 30.

Epidemic Typhoid.—The Niagara Falls *Gazette* makes the statement that typhoid fever is epidemic in that city. It is attributed to contamination of water from Buffalo sewage.

The Emergency Hospital at Eagle and Pine streets is rapidly nearing completion and will be ready for occupancy October 1. The new building will contain accommodation for 100 patients.

The Fresh Air Mission has already sent 715 children to Cradle Beach this summer for a fortnight, and another party of 70 or 80 has again been sent. The season will close one week earlier than usual because of lack of funds.

Col. Charles R. Greenleaf, assistant surgeon-general, will represent the Superior Board of Health of the Philippine Islands at the annual meeting of the American Public Health Association to be held in Buffalo, September 16 to 20.

Chloroform Death.—A case of death from chloroform anesthesia has occurred at the Buffalo General Hospital. The patient, a man 34 years old, went to the hospital for the purpose of having a slight growth removed from his arm, and died under narcosis.

Gowanda Quarantine Raised.—Health Commissioner Wende has returned from Gowanda after raising the quarantine against smallpox with which some of the Polish factory workers were afflicted. There were seven cases, but every one was vaccinated and the danger is now past.

New York City.

Gift to French Hospital.—Robert Lebaudy, of France, has subscribed $10,000 to the building fund for the hospital the French Benevolent Association is to build in West Thirty-fourth street.

Abatement of Nuisance.—The health authorities of New York City have informed the New York Central Railway that the nuisance found to exist in the tunnel running out from the Grand Central Station must be abated or drastic action would be taken. The principal sources of complaint are insufficient lighting and ventilating facilities in portions of the tunnel.

Sick Children's Mission.—Sick children from the tenements of New York to the number of 2500 have already received medical service from the Sick Children's Mission of the Children's Aid Society since the opening of the season, June 15. This compares favorably with 1157 such patients attended by the same organization during the entire season last year. To fully 20 per cent. of the 2500 cases aided by the mission nourishing foods as well as medicines have been supplied.

Oil Treatment of Mosquitoes.—Dr. Doty has completed the work of treating the chain of stagnant ponds near the quarantine station on Staten Island with oil for mosquitoes, and is highly pleased with the result so far achieved. Millions of dead mosquitoes were found in the pond treated with oil. Many other millions which were just in a state of becoming mosquitoes were also found dead. The work has been successful past expectations.

OHIO.

Card Index of Deaths.—The sanitary policeman of Youngstown is making a card index of all deaths in the city for the last ten years—about 7000 in all.

Dr. Michael A. Albi, Cleveland, who was compelled to sue the parents of a patient, who died after an operation for appendicitis for the amount of his bill, has been awarded a judgment of $75.

Spitting Ordinance to be Enforced.—Dr. Clark W. Davis, Health Officer of Cincinnati, announces that he is about to start a campaign against the violators of the ordinance prohibiting spitting in street cars and public conveyances.

Charity Physicians of Columbus.—The director and superintendent of the Health Department of Columbus have awarded the contracts for poor physicians in the various wards of the city to the nineteen lowest bidders, whose bids vary from $48 to $440.

Typhoid at Hiram.—Secretary Probst, of the State Board of Health, has returned to Columbus, from Hiram, where he investigated an epidemic of typhoid fever. There were 40 cases. The epidemic is attributed to the water from the well on the Hiram college campus.

Personal.—Dr. H. C. Rutter, Gallipolis, has gone to Columbus, where he will resume practice.——Dr. William Pritchard, Cincinnati, has been appointed second assistant physician at the Columbus State Hospital.——Dr. Ernest Scott, Columbus, is going abroad for study.——Dr. Allan Brankamp, Cincinnati, is expected to return from Europe, September 15.——Dr. George A. Gorsuch, and Dr. and Mrs. C. Melvin Harpster, Toledo, sailed for Europe, August 24, on the *Maasdam*.——Dr. George W. Moorehouse succeeded James S. Knowles as superintendent of the Lakeside Hospital, Cleveland, August 17.

TENNESSEE.

Dr. James A. Albright, Nashville, secretary of the State Board of Health, has gone to his old home in North Carolina on a visit and will go to Washington before his return.

No Spitting in Nashville.—The inspectors of the Nashville Board of Health have been instructed by Dr. Larkin Smith, City Health Officer, to strictly enforce the law against expectoration in public conveyances and public buildings, and to arrest offenders.

Personal.—Dr. James F. Roper, Harris, has sold his practice to Dr. R. V. Dukes, of Laurel, Miss., and will move to Union City.——The office of city health officer of Chattanooga expired by limitation, August 19.——Dr. William H. Poindexter, Bells, has been elected a member of the local board of health.

School Children Must Be Vaccinated.—The Board of Health of Memphis, on August 15, adopted a resolution declaring compulsory vaccination of all children in the city a prerequisite to their attending the various schools, public and private. Dr. Hasse, secretary of the board, stated in explanation that certificates previously given will be satisfactory and that no certificate will be demanded where a satisfactory vaccination scar can be shown.

WASHINGTON.

Scarlet fever, in mild form, is increasing at Walla Walla. In the last five days of July, 11 new cases were reported.

Dr. George W. Libby, Spokane, a member of the Board of Plumbing Examiners, has resigned in favor of a representative of the journeymen plumbers.

Changes of Location.—Dr. Francis J. Ledbrook, of Lakefield, Minn., has located in Moscow.——Dr. Alexander Smith, Oakesdale, has moved to Vineland.

Walla Walla Hospital.—During the eighteen months since the opening of this institution, 371 cases have been treated, 201 of which were surgical and 170 medical. There have been 84 gynecological cases and 33 case of typhoid fever.

WISCONSIN.

Typhoid in Baraboo.—It is reported that more than 2 per cent. of the population of this town are ill with typhoid fever.

New Licensees.—Of the applicants who took the recent examination by the State Board of Medical Examiners, 28 passed and have received licenses to practice in Wisconsin.

Unregistered.—It is reported that 125 of the 400 physicians of Milwaukee have failed to comply with the law requiring them to file their certificates with the county clerk before March 30, 1900.

Personal.—Dr. Edgar J. Orvis, Oakfield, who disappeared August 3, has been heard from. He writes Dr. J. W. Burns from New York intimating that he would never return.——Dr. Anton B. Opicka, Wonewoc, has been arrested, charged with practicing medicine without a license.——Dr. Frederick Deutschberger, Milwaukee, possessor of many certificates, but no diploma, plead guilty of practicing without a license and was fined $50 and costs.——Dr. Oscar E. Lademann, Milwaukee, has returned from a 3-years' course of study in Berlin and Vienna.

Smallpox Epidemic Threatened.—Dr. Uranus O. B. Wingate, Milwaukee, secretary of the State Board of Health, declared on August 20 that Wisconsin and all states of the middle West would be swept by a scourge of malignant smallpox unless prompt and early action were taken against the disease. He proposes to locate the disease by getting a list of the infected camps. He will then ask all lumber contractors to make vaccination a condition to employment among the men. Detention hospitals will be erected and instead of allowing those who have the disease to go at will among the settlers, they will be confined until cured. As the matter now stands, as soon as a man is known to have smallpox he is discharged, and immediately goes out of the woods into the settlements. Then, in order to get to the very hiding places of the disease, the infected camps must be destroyed, and further damage from that quarter prevented.

GENERAL.

Honolulu News.—Queen's Hospital is to receive an appropriation from the legislature of $1666 monthly.——The leper examining board, as reconstituted, consists of Drs. Sloggett, Cooper, Moore, Meyers, Sinclair and McDonald.

Mosquito-Infected Nurse Dies.—Miss Clara Maas, a nurse at Havana, formerly of New Jersey, allowed herself to be bitten by two infected mosquitoes and died, August 24, seven days afterwards of yellow fever. She desired to become immune. This gives three deaths out of six experimental cases during this month at Havana.

Mental Healers Give Bonds.—Helen Wilmans, 70 years old, founder of a "Mental Science Association," with her husband and son-in-law, were arraigned in the United States Court at Jacksonville, Fla., and gave bonds in the sum of $5000 each. The postoffice authorities state that they have sufficient evidence to convict them.

Medico-Military Journal.—The Association of Military Surgeons of the United States is about to publish a journal instead of issuing an annual volume of transactions. The contracts for its publication have already been made, and the first number of the journal will appear shortly. The editor-in-charge is Captain James E. Pilcher, assistant surgeon, U. S. Army, retired, under the supervision of a governing board.

Dr. A. P. Ohlmacher has been appointed professor of pathology in the Northwestern University Medical School (Chicago Medical College). Dr. Ohlmacher is director of the pathological laboratory of the Ohio Hospital for Epileptics at Gallipolis, where he has done excellent practical work, particularly on the morbid anatomy of epilepsy. Previous to going to Gallipolis he was professor of comparative anatomy and embryology at the College of Physicians and Surgeons, Chicago; later professor of pathology in the Chicago Policlinic, and from 1894 to 1898 professor of pathology in the Cleveland College of Physicians and Surgeons. He will retain his position at Gallipolis for the present.

Braithwaite's Retrospect Discontinued.—The 73d volume of *Braithwaite's Retrospect*, just received, contains the announcement that this historic semi-annual journal is to be discontinued, that the last volume has been issued. For over sixty years *Braithwaite's Retrospect* has been a mirror of all that was new, of value in medicine, and was the precursor of the modern year-book. As the editor says in the announcement of the discontinuance, medical journals now provide regularly, abstracts and summaries of medical literature from all parts, with the consequence that they each contain a retrospect of that which is new in medicine which was formerly only to be had in more special publications. While the *Retrospect* has, in some respects, outlived its usefulness, its career has been one in which its founder was justly proud, and there will be a pang of regret among many of the older members of the profession, both in this country and in England, at the thought that it will appear no more.

CANADA.

Many cases of smallpox are reported from a small village near the capital, Ottawa. In an area of five miles, there are some 35 cases. Ten families are suffering from the infection up to the present date.

The McGill medical faculty has postponed the sessional opening this year until October 1, instead of September 13, as formerly. This is on account of the many alterations now proceeding. Every effort is being put forth to have the library, the faculty rooms and the new laboratories completed before the expected visit of the Duke of York.

Dr. Thomas Page, Brockville, Ont., was killed at Cornwall on the night of the 21st inst., by being run over by a train. While stepping on the train he missed his footing and fell under the wheels. One leg was cut off, while the other was badly crushed. He was removed to the Cornwall General Hospital, where he died the following morning.

Personals.—Dr. Joseph Prendergast, Chicago, is visiting friends in Toronto.——Dr. Aristide Blais, Berthier, who returned a few weeks ago from two years' study in Paris, has been spending a few days in Montreal, on his way to Alberta, N. W. T., where he intends to take up practice.——Dr. Aldege Ethier, formerly house physician at the Notre Dame Hospital, Montreal, has returned from Glasgow, where he went some months ago. He will spend some days in Montreal, and then go to Paris, Ont., to take a position in St. Michael's Hospital.

Montreal General Hospital.—At the quarterly meeting of the Board of Governors held during the week, Dr. F. J. Shepherd opposed the scheme for charging 5 to 10 cents for medicine to outdoor patients. Since the charge was instituted, there has been a great falling off in the outdoor patients. At the next meeting Dr. Shepherd will move to have the charge removed. During the past quarter 783 patients were treated to a conclusion. Of these 56 died, 25 of them within three days of admission. The charge for medicine made during June and July produced $186.20. The number of patients at the outdoor department during these two months was 4220, as against 6081 in 1900.

The Health of Ontario.—The nineteenth annual report of the provincial Board of Health of Ontario for the year 1900 has just been issued. In addition to the regular report of the secretary, it contains special reports on the outbreaks of disease, etc. The laboratory work during the year shows that 1669 specimens were examined as follows: Sputum, in cases suspected of tuberculosis, 703; exudate, in cases suspected of diphtheria, 526; blood, in cases suspected of typhoid fever, 221; water for bacteriologic examination, 194, and water for chemical examination, 33. Of 480 tuberculosis specimens sent, 170 showed the bacilli of tuberculosis, 79 being from males and 91 from females, the great preponderance of positive cases being between the ages of 20 and 30 years. Of 526 cases suspected of diphtheria, 247 showed the bacilli. In 221 specimens examined for typhoid, 54 gave a positive result.

"Christian Scientist" Arrested.—The father of a boy who recently died in Toronto from diphtheria while under "silent treatment" has been placed under arrest pending an investigation. As an evidence of a strong growing sentiment against this cult, the verdict returned by the coroner's jury is interesting: "That the said boy came to his death on Tuesday, August 13, at the home of his parents, from diphtheria, and we find the father of the deceased showed culpable criminal negligence in not providing medical assistance, nursing and comforts, and that ——, the 'christian science' demonstrator, was an accessory after the fact, inasmuch as he undertook to advise and treat a dangerous and contagious disease, which he admitted he was totally ignorant of. The teaching of the sect known as the 'christian scientists,' as brought out in the evidence, is a danger to the community, and the jury would recommend that the law should make it a criminal offense for a demonstrator of this peculiar sect to attend or treat a case which is not being attended by a duly qualified practitioner."

FOREIGN.

Staff Surgeon-General Coler, of the German army, died recently at Berlin.

Tribute to Hansen.—A bust of Dr. G. H. A. Hansen, the discoverer of the leprosy bacillus, was unveiled on August 10, at Bergen, Norway.

French Congress of Urology.—The fifth reunion of the urologists of France and other countries will be held at Paris, October 24 to 26, with Guyon in the chair. Movable kidney is the chief subject appointed for discussion. The general secretary is E. Desnos, 31 rue de Rome, Paris.

Egyptian Medical Congress.—The profession in Egypt is organizing a medical congress to convene at Cairo, December 10 to 14, 1902. It will be under the patronage of the Khedive, and the first great gathering of scientific men in an Oriental country. Cholera, bubonic plague and dysentery will, it is expected, receive due consideration. Dr. Voronoff is secretary-general in charge of the arrangements.

LONDON LETTER.

Complimentary Dinner to Surgeon-General Jameson.

A complimentary dinner has been given to the Director-General, at which Sir William Church, president of the Royal College of Physicians, presided, and which was attended by a large number of the most eminent medical men in London, including Sir William MacCormac, president of the College of Surgeons, Sir Lauder Brunton, Dr. Conan Doyle (the well-known novelist), and Sir Frederic Treves. The chairman said they had met to do honor to one who deserved well of his country and of his profession. He was placed somewhat in the position of having to make bricks without straw. The present war was unique in its difficulties. Never before had so many men left our shores for so great a distance. But he met all the requirements which were placed upon him. Surgeon-General Jameson said in reply that when the army in South Africa was first doubled and then trebled a great strain was placed on his department. Soon invalids began to be received from Africa in thousands. Up to the present 50,000 had been received. Not one of these was transferred to a civil hospital. The reserve of the Corps was first called out; then, they enlisted and trained men as fast as they could. Every man that could be spared was recalled from the Colonies. Then, they tapped the militia and volunteer medical staffs. For a considerable time before the war broke out the Director-General and his staff urged upon the government the necessity of increasing the Medical Corps, but for the most part without avail. The department had sent to Africa 4000 tons of medicine and material, and had mobilized 151 staff and regimental units, 19 bearer companies, 28 field hospitals, 5 stationary hospitals, and 16 general hospitals. They had fitted out in this country 2 hospital ships and 3 hospital trains. At the present time there were 21,000 beds in South Africa, not counting field hospitals. Fault had been found with his department for not having made sufficient sanitary arrangements in the field, and this in face of the fact that the post of sanitary officer had been abolished against the advice of the Department. The officers of the Medical Corps, after superhuman efforts, were exposed to criticism and an inquiry such as had not been applied to any other branch of the army and exposed to blame which others should have borne. The sympathy which had been denied to them by others and which found expression in the presence of those at the dinner would be all the more esteemed and valued. Sir William MacCormac said that it was impossible to say too much in admiration of how Surgeon-General Jameson had met every requirement, and it seemed to him passing strange that the government had allowed him to leave the army without the customary recognition given to all his predecessors and without one word of thanks.

Koch's Paper on the Prevention of Tuberculosis.

Koch's recent view that human and bovine tuberculosis are distinct diseases and that the latter is not a source of danger to man, has been widely criticised in the lay as well as the medical press, and has received no support whatever. At the last council meeting of the Royal Agricultural Society, Lord Spencer, speaking on the report of the veterinary committee to carry out experiments on the subject, expressed the hope that the provisions in force for the prevention of the conveyance of tuberculosis from animals to man would not be relaxed while the matter was still in doubt. The most important criticism of Dr. Koch's arguments which has appeared since the Congress is a letter addressed to the *Lancet*, by Dr. Copeman, of the Local Government Board, who is well known for his experiments on variola and vaccinia. He points out that while Koch says that the animals which "had eaten bacilli of bovine tuberculosis had without exception tuberculous infiltration of the greatly enlarged lymphatic glands of the neck and mesenteric glands and extensive tuberculosis of the lungs and spleen," yet no mention is made of tuberculous lesions of the intestine. This omission is all the more remarkable as Koch, in giving reasons for his conclusion that bovine tuberculosis can not be conveyed to man by ingestion of milk or butter containing "living and virulent bacilli," says that it is only "when the intestine suffers" that a case of tuberculosis can be assumed with certainty to have been "caused by alimenta." It will be remembered that the great rarity with which tuberculosis of the intestine is found in necropsies at children's hospitals in cases of tuberculosis was one of Koch's arguments against the origin of the disease from ingesta. Lord Lister, in replying to Koch at the Congress, pointed out that if primary intestinal tuberculosis were rare in children mesenteric tuberculosis was common, and said that the interpretation seemed to him to be that the bacilli passed through the intestinal mucous membrane without causing any obvious lesion and were arrested in the glands. Unless Koch made an important omission in his paper this is exactly what he claims to have taken place when he fed cattle with bacilli from bovine tuberculosis; yet without any reason he implicitly denies its possibility in man.

Correspondence.

Impressions of the London Tuberculosis Congress and the Black Forest Sanatoria for Consumptives.

WATCH HILL, R. I., Aug. 23, 1901.

To the Editor:—This gathering of medical men was the largest and most complete ever assembled for a special purpose. As I sat on the platform during the opening meeting, when the different nations, through their designated delegates, were introduced, I knew that it had never been my good fortune, in all the medical conventions I have attended, to look upon such a distinguished body of men. When the 2000 members were present they filled completely the body of Queen's Hall, where the general sessions were held. Of this assemblage of men I should judge nearly one-half were from outside of England. America, France and Germany especially had good representations. It was indeed an honor to be a member of it, and to take part in such a Congress.

It would seem that the Londoners purposed to outdo all previous medical gatherings in social features, and I congratulate them on their success. The Englishman is at home and the prince of hosts when dining is the order of the day.

A dinner was given by Sir James Blyth, on Monday, to the Duke of Cambridge, who presided at the opening meeting of the Congress. There were present the Earl of Derby, the Lord Mayor of London, and distinguished members of the nobility, of the foreign and local medical profession, to the number of sixty. There was the "At Home at Apsley House" Tuesday afternoon on the invitation of the Duchess of Wellington, who, with her husband, gracefully received us in that stately mansion filled with the costly rewards and war relics of their ancester, "the Duke." The pleasure of attending the Baron de Rothschild's reception in their princely house, I feel, was also, with the two functions previously named, afforded me through the kind attention of my good friend and host, Dr. C. Theodore Williams. Then there was the general reception of the members and delegates on the opening night in Queen's Hall, Langham Place, by the Presidents of the Council of the Congress and the executive officers, a magnificent affair; on Tuesday evening, the reception at the Mansion House, by the Lord Mayor and Lady Mayoress in all their gorgeous official robes, and on Friday night the grand banquet given to the officers and foreign delegates of the Congress. This was not all, but enough has been mentioned to show how well socially the visitors from abroad were looked after.

THE MUSEUM.

A very important feature of the Congress on Tuberculosis was the Museum designed to illustrate the bacteriology and pathology of tuberculosis. It was a wonderful exposition of the subject and the student was aided by a most admirable catalogue. It was gotten up without regard to expense, and was the finest collection it has been my good fortune to see.

The latest methods of preparation of pathological specimens gave fine illustrations of all the possible manifestations of tuberculosis. Especially attractive were the beautiful series illustrating the localization of tuberculosis in the bronchial and mediastinal glands, in some cases of enormous size. These and other like specimens seemed to show in a striking way the important agency of the glandular system in this disease.

In the bacteriological department were remarkable illustrations, through the cultures on exhibition, of all kinds of tuberculosis. There was the 435th culture (in five tubes) of Koch's original discovery of the bacillus tuberculosis, first isolated by him on Aug. 15, 1881. These cultures had been carried down through these twenty years and kept continually growing from the original seed. There were three very interesting test-tube cultures, first showing the normal state of the germ for comparison, second a sub-culture made after exposure to liquid air for 42 days without contact, third a sub-culture after similar exposure with contact—all showing that the bacillus grows as vigorously as ever after exposure for 42 days to 186 degrees F. below zero.

THE CONGRESS A SUCCESS, YET DISAPPOINTING.

As a means of the education of medical men, as an effort preliminary to definite conclusions which must be reached at another time, and as an opportunity for earnest workers, in this special field, to get together from nearly all over the world to compare notes and personally learn from each other their different views, the Congress was a marked success. But as to any definite conclusions reached, it was disappointing. The cut-and-dried resolutions proposed and voted on, without any open discussion, at the last general meeting were commonplace compromises, which probably fairly represented the collective knowledge of tuberculosis possessed by the Council proposing them.

EXAGGERATED IMPORTANCE GIVEN TO MINOR THINGS.

Exaggerated importance and much time was given to the "spitting nuisance," the agency of ladies' long dresses in carrying and disseminating the germs, and to the theory of infection generally in preference to any other hygienic means of prevention, which, to my way of thinking, offer more hope for the extermination of tuberculosis than any agency simply preventing infection.

KOCH'S ADDRESS.

To Professor Koch, more than to any other man must be given the credit of capturing the interest of the Congress by the remarkable stand he took as to the non-infectibility of man by bovine tuberculosis. At Sir James Blyth's dinner, on Monday evening, Dr. Williams came to me and said: "Do you know there is a devil of a rumpus brewing about what Koch is going to say in his address to-morrow? They are getting awfully worked up about it and they won't stand it, and he will be called down." It was a memorable meeting at which Koch read his paper. The interest was intense. To look upon that sea of intelligent faces and to note the excitement and the restrained applause, was an experience one has but once in a lifetime. They cheered the presentation of his views, though the great majority doubted his conclusions. But when Lord Lister, who was that day in the chair, called in question the positive statement Koch had made and said, "It is a serious matter if the conclusions be wrong," the applause was the heartiest of any time that day. And when he asked if it was indeed "established beyond a doubt that tuberculosis is always air-borne." I for one, thought he was getting nearer the kernel of the question than had anyone else. Professor Nocard followed and cited instances where veterinary surgeons had become inoculated by accident with animal tuberculosis. Professor Bang of Copenhagen followed and said, "Koch went too far in saying that there was no necessity for taking measures against bovine tuberculosis." And finally, Professor Sims Woodhead, while complimenting Professor Koch, referred to a specimen in the Museum of the Congress which proved that it was possible for human beings to be infected with tuberculous disease from animals.

One is inclined to ask, is this obstinate conservatism a possible cloak for ignorance of the real cause of tuberculosis? It is as difficult for a typical English doctor to change his settled opinion on a medical subject as it would be for the English tradesman to deal in decimal money instead of their more troublesome and inconvenient six-pences, shillings and crowns. Just think of the dilemma into which they are being driven! Here we have Koch fastening upon his tubercle bacillus limitations which will be in opposition to the idea that the germ sufficiently explains the disease. Avian tuberculosis is supposedly different from the bovine variety, and the latter not transmissible to human beings, and human tuberculosis not infective in animals (?). Here we have Brouardel, of Paris, in a splendid all-round address, "knocking out" the idea of heredity (except of a possible susceptibility to tuberculosis), and Knopf and many others showing that a healthy human being is non-infective to the germ; and Williams showing the splendid results of climatic treatment in proportion as the advantages of practical outdoor living are afforded; and James F. Allen, of Natal, South Africa, explaining the immunity from tuberculosis in his section 3000 to 6000 feet above sea level of three different classes of people, namely the Indians, the English and the Zulu tribes, on the ground that their life is essentially, and in fact, a life out of doors. Then, again, comes Harold Coates, of Manchester, and A. Ransome, of Bournemouth, and others also, showing how bad housing, aggregation and deficient lighting and deficient ventilation foster and produce the disease. Where, then, does the germ come in? Does it not all show (Koch's contention especially included), that to get at the prime cause of tuberculosis we must, as I stated in my own address, go back of the germ to some common predisposing cause which will explain the frequent occurrence of this disease in birds and animals as well as in man? My belief is, that that common cause is deficient ventilation; that the air once used is thereafter not only unsuited to sustain life healthfully, but positively injurious until it has been revitalized by practically outdoor conditions: And that the penalty of the air's devitalization is finally tuberculosis. There is an electrical condition of the air, which is not yet fully understood, but upon which its power of vitalizing and sustaining living plants and beings depends. When our education comprehends this fact we will come nearer the prevention of tuberculosis than we have ever been before.

Sanatoria in the Black Forest.

A very interesting part of my sojourn abroad was the visit to the Black Forest in Germany and the inspection of the Sanatoria for consumptives there, after the adjournment of the Congress on Tuberculosis. Hohenhonnef Sanatorium on the right bank of the River Rhine is a beautiful place situated on rising ground say 100 or 200 feet above the river and flanked on three sides with woods through which wind several miles of graded walks. Here the patients lead a lazy life, most of the time reclining in open-air sheds. They live well. Wine at meals is the rule with many, and five meals a day the custom of most. The place seemed rather damp to one used to Colorado dryness and sunshine, but the 90 or more inmates of this Sanatorium seemed to be contented and doing well. Dr. Feige, the assistant physician, was very kind to me. Together we drove to the top of a mountain near by, where, from the ruins of Drachenfels, is obtained a fine view of the Rhine from Cologne to Coblenz.

Wiesbaden, the great watering place of this part of Germany, reached after a pleasant day's steaming up the Rhine, is a lovely spot. This town illustrates what can be made out of such a simple, natural advantage as an ordinary hot saline spring, of which there are many not yet half appreciated in our own country.

Another day's ride to Frankfort and thence to Colberg brings one to the Falkenstein Sanatorium. This Sanatorium differed not much from that at Hohenhonnef, either in its capacity for receiving patients or the prevalent wooded and damp surroundings, and likewise seemed to offer no unique or original form of treatment.

On my return at Colberg, I fell in with Rev. Mr. Oakes, of the Consumptive Home at Denver, who was on a similar investigating mission, and we had a delightful trip together up through the Black Forest. The railway opened out into frequent stretches of fine farm country, extending up the sides of the hills sometimes to the very summit. We arrived at Cologne late at night, and took train again in the early morning for Offenburg, and transferred thence to Beberack Zell. That morning's ride up the valley to Beberack Zell was very delightful, as every turn of the railroad gave a new and pleasant view, among them the castle of Baroness Hirsh (noted for her philanthropy among the Jews), beautifully covering the whole summit of a small, round hill. From Beberack Zell, where our carriage met us, we followed up an 8-foot wide brook some ten miles, until it became about a foot wide, and there found Dr. Walther's (Detweiller's) Sanatorium. The ride up the valley was delightful. We passed thatched Swiss cottages, where the cows occupy the ground floor, the family the second, and the hayloft the roof space. Here little hamlets crowd close upon the narrow roadway, along which every half mile or so is a shrine, perhaps lately contributed to by some devout worshiper with a sprig of oats or a bunch of flowers. Dr. Walther's main house has windows, but they are all taken out this time of year. The transoms are large and the outlook in the right directions to catch the best summer exposure. There is individualization, as there should be, for each patient, but no special crowding of food as there is at some institutions, simply three good meals a day, and graduated exercise by walking according to each one's ability and condition. He scouted at the use of antiseptics, saying soap and water were good enough to clean up a room with after a patient had died in it. We could not help reasoning that if he had the dryness, sunshine and altitude which we get east of the Rocky Mountains, he would have the best place in the world in which to treat consumption. But then, if he had these, he would not have his heavy foliage and grassy hillsides and the nearness to the people he would serve. Of course, devoting his attention to only 45 patients, all he can accommodate at one time, he is very successful.

The next institution we visited was Dr. Hettinger's, farther down in the same valley. It is a compromise between Dr. Walther's and the first two mentioned. But it is a clean, airy, well-lighted and well-cuisined sanatorium, which, because of its similarity in many respects to his own "Home," in Denver, much delighted the esthetic mind of Mr. Oakes. We could not help noticing the double windows, and I learned that sometimes in winter the storms are so severe that these are deemed necessary. I had heard of the double windows generally used by the Swiss, to which Dr. Tucker Wise attributes the frequent occurrence of tuberculosis in that otherwise healthy country.

Well, they are all coming around to the same belief that we physicians in Colorado have been preaching these many years, namely, pure air and an active outdoor life in that climate where it can be had the easiest and most comfortably.

Yours respectfully, CHARLES DENISON, M.D.

Vivisection—A Reply to Dr. Keen.

TOLEDO, OHIO, Aug. 21, 1901.

To the Editor:—I have read the communication of Dr. Keen, published in your issue of August 10, and already applications have been made by members of the medical profession for literature concerning the subject of the controversy—human vivisection.

As the American Humane Association considers this matter one of vital importance, its executive committee has, after amendment and revision, just printed that Review of Dr. Keen's letter upon which he, in his last communication, comments; and in order to do him justice, the Association has added his first letter, which he has called "The Misstatements of Antivivisectionists." These two documents in one pamphlet can be secured gratis by any physician in the United States who will send his professional card to "The Special Committee," Postoffice Box 215, Providence, R. I. For those medical men who carefully read this pamphlet, it would seem to me that Dr. Keen's latest letter will need no reply.

If your space would permit, there could be pointed out in this document some very serious misquotations, leading him to misstatements and comments which ordinarily would be without excuse. I prefer, however, to join with his many friends in speeding Dr. Keen in his journey around the world, and wishing him a pleasant voyage and a safe return; to leave his misconceptions and mistakes to his own sober judgment, and the rectification that time will surely bring.

This Association can have no quarrel with the medical profession. It believes, rather, that in condemning and opposing the use of human beings, chiefly women and children, for experiments dangerous to life and health, it has the sympathy of the great majority of the physicians of the United States.

Nothing can so surely and utterly destroy all confidence in the personnel of the medical profession, and in the security of our hospitals and asylums, as a well-founded impression that every patient, young or old, strong or feeble, high or low, rich or poor, is not absolutely secure in all of his personal rights.

He who, in the pretended interests of science, consciously aids in the destruction of this confidence or security is, in my judgment, little less than an enemy of his race.

Yours most truly, JAMES M. BROWN,
President American Humane Association.

[We shall be glad to see the publication of Dr. Keen's letters in full with the Humane Association's pamphlets. We have no fear of the judgment of any unbiased individual who is fully informed on the subject, and think that any such one who reads Dr. Keen's replies, as well as the publications referred to by our correspondent, will be able to form his own opinion. Knowing as we do the erroneous character of some of the statements in the Humane Association's pamphlet, some of them based on misapprehensions patent to any well-read physician, it seems to us that Dr. Keen's letter can have no reply. If there is an impression abroad that the rights of the hospital and asylum patients are not regarded by the medical profession in this country, it is due to sensation-mongering newspapers and to misstatements, whether wilful or not we do not care to say, of such publications as those that called out Dr. Keen's replies.—EDITOR.]

Book Notices.

LECTURES ON NASAL OBSTRUCTION. By A. Marmaduke Sheild, M.B. (Camb.), F.R.C.S. (Eng.), Surgeon to St. George's Hospital, London. With 1 Colored Plate and 27 Illustrations in the Text. Cloth. Pp. 106. Price, $1.50. Philadelphia: P. Blakiston's Son & Co. 1901.

This little work is intended primarily for the student and general practitioner. The author is conservative in operative treatment, particularly with regard to septal spurs; he prefers, however, the galvanocautery in hypertrophic rhinitis and seldom uses an acid. The origin of nasal polypi is attributed in most instances to irritation of the mucous membrane by a concomitant bone necrosis.

A PRACTICAL TREATISE ON GENITO-URINARY AND VENEREAL DISEASES AND SYPHILIS. By Robert W. Taylor, A.M., M.D., Clinical Professor of Venereal Diseases at the College of Physicians and Surgeons, New York. Second Edition, thoroughly Revised. With 138 Illustrations and 27 Plates in Colors and Monotones. Cloth. Pp. 722. Price, $5.00. New York and Philadelphia: Lea Brothers & Co. 1900.

This is not a mere aggregation, but a discriminating digest of the latest knowledge of the subject and there is no chapter in the work from which the reader may not learn something new. It is a most satisfactory text-book, and is modern in every particular. It is most comprehensive in its scope, sound and practical in its teachings, and we predict for it a wider circulation than the first edition enjoyed, and in time an urgent demand for a third edition.

THE TREATMENT OF FRACTURES. By W. L. Estes, A.M., M.D., Director and Physician and Surgeon-in-Chief of St. Luke's Hospital, South Bethlehem, Pa. Cloth. Pp. 216. Price, $2.00. New York: International Journal of Surgery Co.

This work of 216 pages is a publication in book form of a series of papers by the author which appeared in the *International Journal of Surgery.* No attempt is made to discuss in a complete manner the entire subject of fractures, and much, therefore, which pertains to the pathologic side of the subject has been omitted. The work is essentially one on treatment, and this phase of the question is handled in an eminently practical manner by one who has had a considerable experience in the management of these acute accidents.

The aim of the author has evidently been to the practical rather than to the scientific, and he has limited himself almost entirely to a description of his own methods.

DISEASES OF THE ANUS AND RECTUM. By D. H. Goodsall, F.R.C.S. (Eng.), Senior Surgeon (late house surgeon) to St. Mark's Hospital for Fistula and Other Diseases of the Rectum, and W. Ernest Miles, F.R.C.S. (Eng.), Surgeon (outpatients) to the Gordon Hospital for Diseases of the Rectum. In Two Parts (Illustrated). Part 1. Cloth. Pp. 311. Price, $2.50. London, New York and Bombay: Longmans, Green & Co. 1900.

Part I deals with the anatomy, general diagnosis, abscess, fistula, fissure and hemorrhoids. The subjects are, in general, very well handled. In the treatment of hemorrhoids preference is given to the operation by ligature to the exclusion of all other methods. While this is the best method in the majority of cases, there are other methods which certainly are of use in special cases, and in a work of this character these methods deserve more attention than to be dismissed as useless by a three-line notice. The illustrations, which are quite numerous, are very good, most of them being reproductions of photographs.

With Part II, which is in preparation, the work will be quite complete and worthy of careful reading.

SURGICAL APPLIED ANATOMY. By Sir Frederick Treves, K.C.V.O., C.B., F.R.C.S., Sergeant Surgeon to H. M. the King. New Edition, Revised by the Author. With the Assistance of Arthur Keith, M.D., F.R.C.S., Lecturer on and Senior Demonstrator of Anatomy at the London Hospital. Illustrated with 80 Engravings. Cloth. Pp. 571. Price, $2.00. Philadelphia: Lea Brothers & Co.

This edition has been revised throughout, certain sections have been rewritten and much new matter added; it is well up to date. The usefulness of the work can be questioned by no one; it is a more attractive presentation of the most important facts of anatomy, especially in their practical bearings. It is, therefore, a convenient reference book and a valuable suggester of much information that is not always easily brought out, so to speak, from the dusty pigeon-holes of the memory. Sir Frederick Treves, as one of the first of British surgeons, is especially competent to furnish such a work, and this latest revision will be of value to practitioners as well as students preparing for their examinations. The illustrations, while not very numerous, have been considerably increased in this edition, and are specially serviceable and well selected.

THE DIAGNOSTICS OF INTERNAL MEDICINE. A Clinical Treatise on the Recognized Principles of Medical Diagnosis, Prepared for the Use of Students and Practitioners of Medicine. By Glentworth Reeve Butler, A.M., M.D., Chief of the Second Medical Division, Methodist Episcopal Hospital. With 5 Colored Plates and 246 Illustrations and Charts in the Text. Cloth. Pp. 1059. Price, $6.00. New York: D. Appleton & Co. 1901.

Works on diagnosis are comparatively numerous at the present time, but each new one has its special features of interest and value. The present volume, while less complete in its scope than some, covers the greater portion of the field of internal medicine in a very satisfactory way and undoubtedly will be found by many more acceptable than other works. It is particularly strong in its illustrations; these are generally very well selected to illustrate the text, which itself is clear and readable. The arrangement of the work is also one that will possibly find favor with many readers, especially students and general practitioners, much the larger part being given to the "Evidences of Disease" or general symptomatology and this is followed by a shorter section on special diagnosis, differential and direct. The treatment of the special subjects in this department is less elaborate than in some other works, but the main points appear to be generally well stated. There seems to be an omission in the absence of descriptions of the usual urinary and other tests. While mental disorders are left out, it would not have been amiss to have included some notice of a condition like paresis, which has a more or less definite pathology and is often confused in its early stages with certain other nervous disorders. Syphilis of the nervous system might have also received fuller treatment.

Taking the work as a whole it may be said to meet most of the requirements of a work on the diagnosis of non-surgical diseases and to possess special merits in some particulars, more especially in its first section. It is well worth a place in the physician's library.

UTERINE TUMORS: Their Pathology and Treatment. By W. Roger Williams, Fellow of the Royal College of Surgeons. Cloth. Pp. 359. Price, $3.00 net. New York: William Wood & Co. 1901.

This monograph opens up with a brief description of the development of the uterus and its anatomic relations. Uterine myomata are then considered in an exhaustive manner. The histology of the uterus in relation to its neoplastic pathogeny, the influence of aberrant elements, "rests," developmental irregularities, gross malformations, and the microbic theory are all considered under the etiology of these new growths. The author thinks that suppressed maternity and sterility "are among the most important factors in the genesis of these tumors."

Is it not more probable that the diminished fertility of these patients is due rather to the pathologic state of the uterus superinduced by the presence of the new growths? Nor does his point find support when he attempts to show the hereditary nature of these growths, for he states "myomatous patients come of large families, for those in my list averaged 8.1 members each." Concerning the etiology of carcinoma he disregards entirely the modern tendency to ascribe this to extrinsic or microbic influences, and says the "great relative proneness of the epithelium of the uterine mucosa to take on proliferative cancerous changes is due to the awakening in its constituent cells of potentialities" derived from their parent cells in the genital ridge which are akin to those which furnish the ovigerms. But such an explanation explains nothing, and will not restrain in the least the earnest search for the cause of cancer which must some day be revealed.

In the operative removal of the cancerous uterus, stress is well laid on the necessity of extending the operation to the removal of the para-uterine tissues and the lymph glands, if better permanent results are to be hoped for.

In the production of this volume the author has labored well and earnestly and given to the profession a work of value.

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French Congress of Hypnology and Psychology.—The tenth annual congress was held at Paris in July. P. Farez described the cure of uncontrollable vomiting in a virgin of 20 and in a ii-para, 35 years of age. Both were cured by painting large and the outlook in the right directions to catch the best summer exposure. There is individualization, as there should be, for each patient, but no special crowding of food as there is at some institutions, simply three good meals a day, and graduated exercise by walking according to each one's ability and condition. He scouted at the use of antiseptics, saying soap and water were good enough to clean up a room with after a patient had died in it. We could not help reasoning that if he had the dryness, sunshine and altitude which we get east of the Rocky Mountains, he would have the best place in the world in which to treat consumption. But then, if he had these, he would not have his heavy foliage and grassy hillsides and the nearness to the people he would serve. Of course, devoting his attention to only 45 patients, all he can accommodate at one time, he is very successful.

The next institution we visited was Dr. Hettinger's, farther down in the same valley. It is a compromise between Dr. Walther's and the first two mentioned. But it is a clean, airy, well-lighted and well-cuisined sanatorium, which, because of its similarity in many respects to his own "Home," in Denver, much delighted the esthetic mind of Mr. Oakes. We could not help noticing the double windows, and I learned that sometimes in winter the storms are so severe that these are deemed necessary. I had heard of the double windows generally used by the Swiss, to which Dr. Tucker Wise attributes the frequent occurrence of tuberculosis in that otherwise healthy country.

Well, they are all coming around to the same belief that we physicians in Colorado have been preaching these many years, namely, pure air and an active outdoor life in that climate where it can be had the easiest and most comfortably.

Yours respectfully, CHARLES DENISON, M.D.

Vivisection—A Reply to Dr. Keen.

TOLEDO, OHIO, Aug. 21, 1901.

To the Editor:—I have read the communication of Dr. Keen, published in your issue of August 10, and already applications have been made by members of the medical profession for literature concerning the subject of the controversy—human vivisection.

As the American Humane Association considers this matter one of vital importance, its executive committee has, after amendment and revision, just printed that Review of Dr. Keen's letter upon which he, in his last communication, comments; and in order to do him justice, the Association has added his first letter, which he has called "The Misstatements of Antivivisectionists." These two documents in one pamphlet can be secured gratis by any physician in the United States who will send his professional card to "The Special Committee," Postoffice Box 215, Providence, R. I. For those medical men who carefully read this pamphlet, it would seem to me that Dr. Keen's latest letter will need no reply.

If your space would permit, there could be pointed out in this document some very serious misquotations, leading him to misstatements and comments which ordinarily would be without excuse. I prefer, however, to join with his many friends in speeding Dr. Keen in his journey around the world, and wishing him a pleasant voyage and a safe return; to leave his misconceptions and mistakes to his own sober judgment, and the rectification that time will surely bring.

This Association can have no quarrel with the medical profession. It believes, rather, that in condemning and opposing the use of human beings, chiefly women and children, for experiments dangerous to life and health, it has the sympathy of the great majority of the physicians of the United States.

Nothing can so surely and utterly destroy all confidence in the personnel of the medical profession, and in the security of our hospitals and asylums, as a well-founded impression that every patient, young or old, strong or feeble, high or low, rich or poor, is not absolutely secure in all of his personal rights.

He who, in the pretended interests of science, consciously aids in the destruction of this confidence or security is, in my judgment, little less than an enemy of his race.

Yours most truly, JAMES M. BROWN,
President American Humane Association.

[We shall be glad to see the publication of Dr. Keen's letters in full with the Humane Association's pamphlets. We have no fear of the judgment of any unbiased individual who is fully informed on the subject, and think that any such one who reads Dr. Keen's replies, as well as the publications referred to by our correspondent, will be able to form his own opinion. Knowing as we do the erroneous character of some of the statements in the Humane Association's pamphlet, some of them based on misapprehensions patent to any well-read physician, it seems to us that Dr. Keen's letter can have no reply. If there is an impression abroad that the rights of the hospital and asylum patients are not regarded by the medical profession in this country, it is due to sensation-mongering newspapers and to misstatements, whether wilful or not we do not care to say, of such publications as those that called out Dr. Keen's replies.—EDITOR.]

Book Notices.

LECTURES ON NASAL OBSTRUCTION. By A. Marmaduke Sheild, M.B. (Camb.), F.R.C.S. (Eng.), Surgeon to St. George's Hospital, London. With 1 Colored Plate and 27 Illustrations in the Text. Cloth. Pp. 106. Price, $1.50. Philadelphia: P. Blakiston's Son & Co. 1901.

This little work is intended primarily for the student and general practitioner. The author is conservative in operative treatment, particularly with regard to septal spurs; he prefers, however, the galvanocautery in hypertrophic rhinitis and seldom uses an acid. The origin of nasal polypi is attributed in most instances to irritation of the mucous membrane by a concomitant bone necrosis.

A PRACTICAL TREATISE ON GENITO-URINARY AND VENEREAL DISEASES AND SYPHILIS. By Robert W. Taylor, A.M., M.D., Clinical Professor of Venereal Diseases at the College of Physicians and Surgeons, New York. Second Edition, thoroughly Revised. With 138 Illustrations and 27 Plates in Colors and Monotones. Cloth. Pp. 722. Price, $5.00. New York and Philadelphia: Lea Brothers & Co. 1900.

This is not a mere aggregation, but a discriminating digest of the latest knowledge of the subject and there is no chapter in the work from which the reader may not learn something new. It is a most satisfactory text-book, and is modern in every particular. It is most comprehensive in its scope, sound and practical in its teachings, and we predict for it a wider circulation than the first edition enjoyed, and in time an urgent demand for a third edition.

THE TREATMENT OF FRACTURES. By W. L. Estes, A.M., M.D., Director and Physician and Surgeon-in-Chief of St. Luke's Hospital, South Bethlehem, Pa. Cloth. Pp. 216. Price, $2.00. New York: International Journal of Surgery Co.

This work of 216 pages is a publication in book form of a series of papers by the author which appeared in the *International Journal of Surgery*. No attempt is made to discuss in a complete manner the entire subject of fractures, and much, therefore, which pertains to the pathologic side of the subject has been omitted. The work is essentially one on treatment, and this phase of the question is handled in an eminently practical manner by one who has had a considerable experience in the management of these acute accidents.

The aim of the author has evidently been to the practical rather than to the scientific, and he has limited himself almost entirely to a description of his own methods.

DISEASES OF THE ANUS AND RECTUM. By D. H. Goodsall, F.R.C.S. (Eng.), Senior Surgeon (late house surgeon) to St. Mark's Hospital for Fistula and Other Diseases of the Rectum, and W. Ernest Miles, F.R.C.S. (Eng.), Surgeon (outpatients) to the Gordon Hospital for Diseases of the Rectum. In Two Parts (Illustrated). Part 1. Cloth. Pp. 311. Price, $2.50. London, New York and Bombay: Longmans, Green & Co. 1900.

Part I deals with the anatomy, general diagnosis, abscess, fistula, fissure and hemorrhoids. The subjects are, in general, very well handled. In the treatment of hemorrhoids preference is given to the operation by ligature to the exclusion of all other methods. While this is the best method in the majority of cases, there are other methods which certainly are of use in special cases, and in a work of this character these methods deserve more attention than to be dismissed as useless by a three-line notice. The illustrations, which are quite numerous, are very good, most of them being reproductions of photographs.

With Part II, which is in preparation, the work will be quite complete and worthy of careful reading.

Surgical Applied Anatomy. By Sir Frederick Treves, K.C.V.O., C.B., F.R.C.S., Sergeant Surgeon to H. M. the King. New Edition, Revised by the Author. With the Assistance of Arthur Keith, M.D., F.R.C.S., Lecturer on and Senior Demonstrator of Anatomy at the London Hospital. Illustrated with 80 Engravings. Cloth. Pp. 571. Price, $2.00. Philadelphia: Lea Brothers & Co.

This edition has been revised throughout, certain sections have been rewritten and much new matter added; it is well up to date. The usefulness of the work can be questioned by no one; it is a more attractive presentation of the most important facts of anatomy, especially in their practical bearings. It is, therefore, a convenient reference book and a valuable suggester of much information that is not always easily brought out, so to speak, from the dusty pigeon-holes of the memory. Sir Frederick Treves, as one of the first of British surgeons, is especially competent to furnish such a work, and this latest revision will be of value to practitioners as well as students preparing for their examinations. The illustrations, while not very numerous, have been considerably increased in this edition, and are specially serviceable and well selected.

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Formaldehyd in Milk.

The adulteration of milk by the use of formaldehyd is probably becoming much more common than is generally suspected. For a time its use was a "trade secret," but it has been so thoroughly advertised that every obscure individual who has a milk route is now familiar with the preservative qualities of formaldehyd. In our large cities the health officers are on the watch, and hence in these its use is being curtailed, but in the smaller towns and villages the people have not this protection. It would be well, therefore, for physicians to guard against this and keep it in mind when mysterious illness develops in milk-users. They should also be prepared to make an analysis of milk at any time as to its freedom from the drug. This is a simple procedure, and yet one that requires considerable technical skill in the use of some of the tests. We copy from the *Lancet-Clinic* the various methods for testing formaldehyd as laid down by Herman Harms, some of which are quite simple:

Rimini Test.—A—Phenyl-hydrazine muriate, 0.5 gm.; distilled water, 100 c.c.; dissolve. B—Sodium nitroprussid, 0.5 gram; distilled water, 30 c.c.; dissolve. C—Soda U. S. P., 15 gm.; distilled water, 60 c.c.; dissolve. To 15 c.c. of the suspected milk in a test-tube add 10 drops of A, mix and add 3 drops of B; mix and let 5 drops of C run in slowly on the side of the test-tube. In the presence of formaldehyd a blue color is instantly produced, changing, on standing, to red. On adding to the mixture of milk and solution A 2 drops of ferric chlorid solution, and then about 2 c.c. of concentrated hydrochloric acid, a red color is produced, which later changes to orange-yellow. In sour milk the above-mentioned blue is supplanted by green. The Rimini test is easily applied, and readily detects formaldehyd when present to the extent even of 1 part in 25,000 or 30,000.

Phloroglucin Test.—Dissolve 1 gram of phloroglucin in 100 c.c. of distilled water. Put 10 c.c. of the suspected milk in a test-tube and add 5 c.c. of the phloroglucin solution; shake and add 1 c.c. of solution of potassa, U. S. P. If formaldehyd is present a red color is developed at once, fading, usually, within five or ten minutes; hence, the color must be observed at once. One part in 20,000 gives a decided reaction.

Hehner's Test.—To 15 c.c. of concentrated sulphuric acid in a test-tube add 1 or 2 drops of ferric chlorid test solution, U. S. P., and mix. Then pour upon this, in such manner as not to mix the layers, the suspected milk. A violet color indicates the presence of formaldehyd. In the case of cream, dilute the cream with an equal volume of water, and then apply the test as above described. The violet color is sometimes produced at once, but oftener not for five or ten minutes, and sometimes not for an hour or so, depending upon the amount of formaldehyd present. By this test a part in 10,000 or 15,000 is readily detected.

Liebermann Phenol Test.—In the presence of small traces of formaldehyd, distill off from the milk a few cubic centimeters and add to this one drop of very dilute aqueous phenol solution. Then pour this mixture slowly upon concentrated sulphuric acid in a test-tube solution so as to form a layer. A bright crimson color appears at the zone of contact. This is easily seen in as little as 1 part in 200,000, and in greater proportion in 1 to 100,000. There is a milky zone above the red color, and, if more concentrated, there will be a whitish or pinkish precipitate. Sometimes the zone will appear in about one hour, one-tenth of an inch below the line of contact.

Hydrochloric Test.—Fifteen or 20 c.c. of suspected milk, together with 2 or 3 c.c. of strong hydrochloric acid, are boiled for a few minutes in a test-tube. A red coloration indicates formaldehyd. Other tests are known, but they are more complicated and require apparatus or reagents not kept by the average pharmacist. The above tests are all simple in their application and afford a ready means of detecting formaldehyd in milk and cream.

Remarks on the Foregoing Tests.—The Rimini test is highly recommendable. The reaction in sweet milk appears rapidly and with certainty. Hehner's test, as well as the phloroglucin and phenol tests, are very reliable and are all extremely sensitive. The hydrochloric-acid test is very simple, but is not to be depended upon. It may show formaldehyd in most instances; however, cases have come under our observation when it has utterly failed to show the reaction, probably because of the milk having undergone some unknown changes. The Liebermann test is simple, delicate, and shows formaldehyd very readily.

As corroborative evidence, it is well, after the tests are finished, to let the suspected milk or cream stand in a warm place for 24 hours. A pure sample will invariably turn sour and separate. A sample which has been "doctored" with formaldehyd, however, will show, at the end of 24 hours, but a very slight separation, if indeed any at all, and will have but a slight odor.

A Word of Caution.—It is desirable that all test solutions be freshly prepared, especially the nitroprussid of sodium solution in the Rimini test; and that the suspected sample be as fresh as possible. Sour samples are difficult to test, and may yield variable results, because in these formaldehyd has been oxidized, and is no longer present as formaldehyd. In carrying out the tests for formaldehyd, it is advisable to work side by side the suspected sample and the one known to be pure. Finally, do not expose your tests or have your milk placed where a bottle of formaldehyd is being opened, for the vapor is very penetrating, and you may thus be easily led to misleading results. When formaldehyd has been found to be present by at least three of the aforementioned tests, it may be considered that its presence has been shown.

Married.

J. L. Dusic, M.D., to Miss Lavina Heyner, both of Cleveland, Ohio, August 12.

William F. Bay, M.D., to Miss Nellie H. Davis, both of Columbus, Ohio, August 15.

Ephraim Cutter, M.D., New York City, to Mrs. Anna L. Davison, of Boston, August 10.

John D. Todd, M.D., Trezevant, Tenn., to Miss Emma R. Hart, of McKenzie, Tenn., June 5.

Marie Merrill, M.D., late assistant at St. Peter (Minn.) State Hospital, to William G. Hyde, of McMillan, Mont., at St. Paul, Minn., August 8.

Deaths and Obituaries.

Thomas J. Turner, M.D., University of Pennsylvania, Philadelphia, 1851, captain and medical director, U. S. Navy, retired, a member of the American Medical Association, died at Mackinac Island, Mich., whither he had gone for his health from his home in Coldwater, Mich., August 21, aged 72. He was appointed to the navy in 1853; was fleet surgeon on the *Asiatic station* in 1875 and 1877; a member of the examining board at Washington thereafter; secretary of the National Board of Health during the yellow fever epidemic of 1877, and was retired in 1891.

James C. Crenshaw, M.D., University of Louisville, 1887, for several years a practitioner in Memphis, Tenn.; thereafter assistant superintendent of the Arkansas State Hospital for the Insane, Little Rock, and for the last year a practitioner of Dermott, Ark., died suddenly at his home in that place, August 16.

Thomas Masters Markoe, M.D., New York City, died August 28, at Easthampton, L. I. A longer notice will appear next week.

David Wooden, M.D., Louisville Medical College, 1885, died suddenly at his home in Grayville, Ill., August 13, from gastro-enteritis, aged 41. At the time of his death he was president of the Board of Education.

Frederick G. Flesher, M.D., University of California, San Francisco, 1893, coroner of Rice County, Minn., died at his home in Faribault, after a short illness, from meningitis, August 14.

Benjamin H. Kittrell, M.D., Tulane University, New Orleans, 1897, of Winona, Miss., who served in the Spanish-American war, died August 17 at Fourth Lake, New York.

David Magie Cory, M.D., College of Physicians and Surgeons, New York, 1866, New York City, died August 19, aged 58.

Alexander McBride, M.D., a pioneer physician of Macon County, Ill., died at his home in Decatur, August 14, aged 71.

S. T. Morehead, M.D., formerly of Allensville, Ky., died suddenly in Nashville, Tenn., August 14, from heart disease.

Jacob Hartmann, M.D., St. Louis Medical College, 1875, of New York City, died in that city, August 18, aged 63.

John L. Dodge, M.D., New York University, 1846, died at his home in Groton, Conn., August 18.

Societies.

COMING MEETINGS.

American Association of Obstetricians and Gynecologists, Cleveland, Ohio, Sept. 10, 1901.
American Academy of Railway Surgeons, Chicago, Sept. 12-13, 1901.
Mississippi Valley Medical Association, Put-in-Bay, Sept. 12-14, 1901.
American Public Health Association, Buffalo, Sept. 16-20, 1901.
Medical Society of the Missouri Valley, St. Joseph, Mo., Sept. 19, 1901.
Medical Society of the State of Pennsylvania, Philadelphia, Sept. 24-26, 1901.
American Electro-Therapeutic Association, Buffalo, Sept. 24-26, 1901.
Roentgen Society of the United States, Buffalo, N. Y., Sept. 10-11, 1901.
Rocky Mountain Inter-State Medical Association, Denver, Colo., Sept. 3-4, 1901.
Conference of State and Provincial Boards of Health of North America, Niagara Falls, Sept. 13-14, 1901.

Arkansas Colored Medical Association.—The seventh annual meeting of this Society was held in Hot Springs, August 15. Dr. Claude M. Wade, Hot Springs, was re-elected president and Dr. George W. Hayman, Little Rock, elected secretary.

Donley County (Texas) Medical Society.—This Society was organized at Clarendon, August 15, with the following officers: Dr. Joel P. Morris, Clarendon, president; Dr. Jerome D. Stocking, Clarendon, vice-president, and Dr. T. W. Carroll, secretary.

Lake Keuka (New York) Medical and Surgical Association.—The second annual meeting of this Association was held at Grove Springs, August 13 and 14. Dr. Clair S. Parkhill, Hornellsville, was elected president and Dr. William W. Smith, Avoca, secretary.

Fergus County (Mont.) Medical Association.—The physicians of Fergus County held a meeting at Lewistown, August 1, for the purpose of organizing a county society. Dr. William A. Long, Lewistown, was elected temporary chairman and Dr. Solon B. Stone, Lewistown, temporary secretary.

Gallia County (Ohio) Medical Society.—This Society was reorganized at a meeting held in Gallipolis, Aug. 22, 1901, and the following officers elected: Dr. Jehu Eakin, Patriot, president; Dr. Rufus D. Jacobs, Vinton, vice-president; Dr. L. B. Turner, Bidwell, secretary, and Dr. J. B. Dustin, Bidwell, treasurer. As a special feature of this meeting, Dr. P. Maxwell Foshay, of Cleveland, addressed the society on "Medical Organization."

Medical Society of the Missouri Valley.—The fourteenth annual meeting will be held in St. Joseph on Thursday, September 19, and Eureka Springs, September 20 and 21. The 'Frisco railroad will carry members and their ladies free from Kansas City to Eureka and return. One fare for the round trip ($1.90) has been secured from St. Joseph to Kansas City. Pullman fare will be $1.00 each way, $2.00 for double berth, which must be remitted to the secretary before September 1, in order that extra cars may be provided for the party. A daylight ride on the return trip may yet be arranged, if a majority prefer it. One day's scientific session will be held in each city, and last day will be devoted to sight-seeing at the Springs. In the evening a reception will be tendered the association by the local profession and Commercial Club. The Western Passenger Association has granted a special rate of fare-and-one-third for round trip, on certificate plan from points in Missouri, Iowa, Kansas, Nebraska, Oklahoma, Arkansas, North and South Dakota. A cordial invitation is extended to the medical profession, and an interesting meeting is anticipated. —Dr. Charles Wood Fassett, secretary.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

Chloretone in Pertussis.

W. Lyon, of London, recommends the following combination containing chloretone to prevent the vomiting in pertussis:

℞.	Bromoformi	m. ii		12
	Chloretoni	gr. iss		09
	Tinct. aurantii	m. x		60
	Mucilag. acaciæ	m. xx	1	30
	Aquæ q. s. ad	ʒi	4	

M. Sig.: At one dose; or

℞.	Bromoformi	m. ii		12
	Chloretoni	gr. iss		09
	Tinct. aurantii	m. x		66
	Glycerini	ʒi	4	

M. Sig.: *At one dose.*

Treatment of Acute Rheumatism.

Dr. George Dock, Ann Arbor, in an interesting article in the *Phys. and Surgeon*, states that the first thing to be observed in the treatment of rheumatism is rest, however mild the symptoms may be. Flannel nightclothes should be worn. Rest for the affected joints should be especially considered. This can be secured by well-applied woolen bandages, and if necessary render the joint immovable by applying splints. The patient should be kept in bed as long as there is fever and joint pain. The diet in the febrile stage must be light, and water given freely. Tea, coffee and alcoholics should be avoided.

The bowels should be moved with small doses of calomel. As to the drug treatment, he recommends the salicylates, but emphasizes the importance of giving them in large doses. The system should be saturated. Not less than 120 grains should be given within twelve hours. He recommends sodium salicylate combined with an alkali such as sodium carbonate given similar to the following:

℞.	Sodii salicylatis	ʒii	8
	Sodii carbonatis	ʒii	8
	Aquæ camphoræ q. s. ad	℥vi	192

M. Sig.: One tablespoonful every hour in water.

He adds that patients with acute nephritis or old interstitial nephritis should not be subjected to the foregoing treatment.

Aspirin as a Substitute for the Salicylates.

Aspirin, which is a comparatively new preparation, is recommended as possessing the following advantages over the salicylates: It does not cause any irritation of the stomach, nor does it disturb digestion. It does not produce the tinnitus aurium. The heart's action is not affected by its use.

Aspirin is a white, crystalline powder soluble in 100 parts of water. Being a combination of acetic and salicylic acids it is used as a substitute for sodium salicylate, resorcin, salol, salophen and creosote, and should not be given in maximum doses with these preparations.

Treatment of Pruritus Ani.

The following gives great service in relieving the troublesome itching:

℞.	Alumnol	gr. xxx	2	
	Pulv. camphoræ	ʒiss	6	
	Lanolini q. s. ad	℥i	32	

M. Sig.: Apply locally night and morning.

To Relieve Burns.

The following containing hydrogen peroxid is recommended as an application for burns of the first or second degree:

℞.	Hydrogenii peroxidi	℥ss	16	
	Adipis canæ	℥i	32	
	Ol. rosæ	gtt. ii		12

M. Sig.: Apply locally.

The Treatment of Leg Ulcers.

Walbaum, in *Med. Rec.*, describes a dressing with which he states a cure is effected within three weeks. After thoroughly cleansing the skin, wet dressings of aluminum acetate are applied until the secretion has been somewhat checked and has lost its odor, which usually takes place in two or three days. A compress wet with spirits of camphor is then applied and covered with rubber protective, which in turn is surrounded with absorbent cotton and a bandage. The dressings should be renewed every second day.

Carbolic Acid in the Treatment of Eczema.

Carbolic acid has been employed in a very extensive manner in the treatment of different forms of skin diseases. Dr. J. F. Schamberg, as noted in the *Med. Standard*, states that the following renders good service as a lotion in the treatment of acute erythematous or papular eczema:

℞.	Acidi carbol.	gr. xxx	2	
	Acidi borici	ʒi	4	
	Glycerini	ʒi	4	
	Zinci oxidi	ʒii	8	
	Aquæ q. s. ad	℥vi	192	

M. Sig.: Apply locally night and morning.

In more chronic cases it should be used in greater strength as follows:

℞.	Acidi carbol.	ʒii	8	
	Glycerini	℥i	32	
	Etheris	℥i	32	
	Spts. vini rect.	℥vi	192	

M. Sig.: To be used locally.

In the subacute vesicular eczema he recommends the following ointment containing phenol and calomel:

℞.	Acidi carbol.	gr. x		66
	Hydrarg. chloridi mitis	gr. xx	1	33
	Pulv. amyli	ʒii	8	
	Pulv. zinci oxidi	ʒii	8	
	Petrolati	℥ss	16	

M. Sig.: To be applied locally.

The above is to be used in all forms except the very acute eczemas.

In other cases of subacute eczema he employs the following:

℞.	Acidi carbol.	gr. x		66
	Plumbi oxidi (C. P.)	ʒi	4	
	Petrolati	℥ss	16	
	Lanolini	℥ss	16	

M. Sig.: Cleanse the affected parts and apply locally.

Exercise in Treatment of Paralysis Agitans.

Dr. J. M. Taylor, in *Jour. of Ment. and Nerv. Dis.*, recommends a plan to overcome the muscular rigidity and impairment of movement. The treatment should consist of exercise. Passive movements and massage with oil inunctions. Passive movements, especially of the neck, back, and limbs, should be given. The spine should be extended by stooping, the legs and arms stretched to the greatest extent and deep breathing practiced. The most important movements to overcome the tremor are slow, *full, forcible* expansions and the attainment of normal position. He reports improvement in several cases in which the foregoing outline of treatment has been employed.

Treatment of Tinea Tonsurans.

Dr. Brown, in *Post-Grad.*, recommends the following in treatment of tinea tonsurans and facial erysipelas:

℞.	Acidi salicylici	gr. xx	1	33
	Chrysarobin	gr. xx	1	33
	Ichthyol	ʒi	4	
	Lanolini			
	Vaselini, āā	℥ss	16	

M. Sig.: Shave the scalp and rub the ointment over the entire surface.

A bandage covering the scalp should then be put on carefully to avoid any chance of the chrysarobin getting into the eyes. At the end of three days the bandage should be removed, the head washed and some emollient salve applied to check the dermatitis usually set up. After a few days the treatment is resumed if necessary.

Trichloracetic Acid in Hay Fever.

Dr. H. Krause, as noted in *Merck's Archives*, recommends the use of trichloracetic acid in 1 per cent. solution, to be snuffed up the nose as a cure for hay fever. During the past two years he has used it in more than thirty cases with good results. He states that improvement and cure follow in two to eight days.

Treatment of Rhus Toxicodendron Poison.

The following preparations are recommended in case of poison from rhus toxicodendron, to which not a few people are susceptible:

℞.	Ext. grindeliæ robustæ flu.	ʒvi	24	
	Aq. menthæ *pip.*	℥iss	48	
	Aquæ rosæ	℥iv	128	

M. Sig.: Apply freely on cloths; or:

℞.	Plumbi acetatis	ʒss	2	
	Tinct. opii	℥ss	16	
	Aq. destil. q. s. ad.	℥viii	256	

M. Sig.: Apply externally in mild cases; or:

℞.	*Ichthyol*	*ʒii*	8	
	Aquæ	℥iv	128	

M. Sig.: Apply externally every three or four hours.

Treatment of Acne Rosacea.

In the treatment of acne rosacea much weaker local applications should be employed than in acne vulgaris. The best results in the former are obtained according to A. Brownlie, in *New York Lancet*, by a combination of local and internal treatment and where the skin is extremely tender internal treatment alone. His plan of treatment is the use of ichthyol in doses of 5 grains after meals three times a day, increasing to 10 grains. Every night and morning the face is steamed for fifteen minutes, and ichthyol salve afterwards applied, which he often combines with ammoniated mercury. The diet must be carefully guarded.

To Prevent the Shedding of Hair.

Dr. David Walsh, of London, according to the *Med. Standard*, recommends the following as a lotion, stating that it is preferable to an ointment, especially in the case of women:

℞.	Acidi salicylici	ʒiii	12	
	Acidi carbol.	ʒi	4	
	Olei ricini	ʒiii	12	
	Spts. vini rectif. q. s. ad	℥vi	192	

M. Ft. lotio. Sig.: Apply locally once or twice daily.

Treatment of the Paroxysms in Pertussis.

The following is recommended by Shoemaker:

℞.	Tinct. lobeliæ	ʒii	8	
	Sodii bromidi	ʒiii	12	
	Spts. etheris nitrosi	℥i	32	
	Syr. limonis q. s. ad	℥iii	96	

M. Sig.: One-half to one teaspoonful every one or two hours.

Epistaxis in People Beyond Middle Age.

Dr. George Coates, in London *Lancet*, states that he has made a study of five cases of epistaxis occurring in the aged, and has observed the cause to be mainly the same in each case, namely: Long-continued high arterial tension, some sudden cardiac disturbance; a congested condition of the venous circulation, with a leakage from an over-filled vein. He treated the attack locally to check the hemorrhage and as prophylactic measures he employed remedies which influenced the general circulation. The important thing being to empty as much as possible the venous circuit, he administered drugs which dilated the arterioles, thus relieving arterial tension, lessening the heart's labor and consequently relieving the congestion in the venous circuit. To meet these indications nitroglycerin or amyl nitrite was very properly used. As heart tonics he employed strychnin and strophanthus. The latter ranks close to digitalis as a heart tonic if prepared by reliable druggists, otherwise the results obtained will be a disappointment. It differs from digitalis in that it does not increase arterial tension by contracting the peripheral arterioles and is therefore better suited in those cases in which it was used by Dr. Coates.

Medicolegal.

Fifteen Thousand Dollars too Much for the Injuries.—The Supreme Court of New Jersey holds excessive the award of damages in the case of Spicer vs. Boice of $15,395, of which only $395 could be accounted for by disbursements. The plaintiff was 66 years of age. His physical injuries were painful, and to some extent permanent; but, while they had impaired, they had not destroyed any function or faculty. Under these circumstances, the court makes a remittitur of $7,500, the condition of letting the verdict stand.

Showing Extent of Injuries by Movement of Arm.—The Supreme Court of Minnesota holds, in the personal injury case of Adams vs. the City of Thief River Falls, that there was no error in permitting the plaintiff to illustrate her power to use her arm, claimed to have been permanently injured in an accident, by movements thereof at the trial and before the jury, she having been allowed to illustrate, by the movement of her arm in raising and lowering it before the jury, the nature and extent of the injuries which, under her claim, were sustained by her. Such experiments, the supreme court holds, were permissible and within the proper exercise of the discretion of the trial court.

Disciplinary Power of State Board of Health.—The question presented for decision in the case of the State Board of Health vs. Ross was whether, under the present act of the legislature of Illinois to regulate the practice of medicine, in force July 1, 1899, the state board of health has power to discipline and revoke the certificates of persons who had been licensed to practice medicine and surgery by the board prior to that date. Section 6 of the act provides that the board may refuse to issue the certificates provided for in the act in certain cases, and "may revoke such certificates for like causes." The appellate court held that this power of revocation plainly referred to certificates issued under the act, stating that if it was the intention of the legislature to give the board of health the power to discipline the holders of certificates issued prior to July 1, 1899, and to revoke such certificates, it had certainly failed to express such intention by this act. If the consequences of interpreting the statute according to its plain and obvious meaning are likely to prove disastrous to the people of the state at large, as contended by counsel, and as would seem not improbable, considering the large number of physicians and surgeons throughout the state, and the temptations to obtain money and practice by a resort to dishonorable conduct which are supposed to beset professional men, the responsibility, the court continued, must rest with the legislature, and not the courts. If the tendency of a law is vicious, the stricter its enforcement the sooner it will be amended or repealed. So the court answered the question raised in the negative. And the opinion of the appellate court is now adopted by the Supreme Court of Illinois, which affirms its judgment. The supreme court merely adds to that opinion that it has carefully examined all of the questions involved, and considered the criticisms of the opinion by counsel and their arguments against the correctness of the same, and is of the opinion the conclusions reached and announced in the opinion are correct.

Pecuniary Value of a Woman's Life.—With striking unanimity have two different courts, in different states, reduced judgments for damages for the deaths of women. In the case of Oakes vs. the Maine Central Railroad Company, the deceased, who left as her beneficiary a healthy child 5 years of age, and whose husband and the father of the child was in poor health, was 35 years of age, in good health, a good milliner, a prudent and industrious woman and affectionate mother, possessing a fair education. Now, the expectancy of life of herself and the beneficiary, the probability of her surviving her husband and being the sole support of her child, the length of time that might reasonably be expected to elapse before the boy would be able to help his mother and care for himself, the possibility that in time she in her turn might become dependent upon him for her support, the loss of a mother's training and good influence, which would tend to make him a better man, and capable of acquiring more money—all these, the Supreme Judicial Court of Maine holds, were considerations in determining the amount of the pecuniary injury resulting to the beneficiary. At the same time, the damages, under the statute under which the action was brought, could not be punitive, neither could they be given for her physical pain and suffering, nor for the grief and sorrow of the child and husband who survived, but the sum given must be the present worth of the future pecuniary benefits of which the beneficiary had been deprived. Under all of these circumstances, the court holds that a verdict for $3,500 was excessive, and that a new trial must be granted unless all above $2,500 was remitted. Likewise, in the case of Rafferty vs. the Erie Railroad Company, where the deceased was a single woman, 45 years of age, who kept house for her three brothers and a sister, who were all single, the Supreme Court of New Jersey holds that, the damages being limited by statute, to the pecuniary loss sustained by the next of kin, a verdict for $5,000 was, under the evidence, excessive. It thinks also that $2,500 would be the limit of a proper assessment of damages in this case, and makes the acceptance of a reduction to that amount the condition of letting the verdict stand.

Restriction of Expert Evidence in Will Cases Urged.—The Court of Appeals of Maryland says, in the case of the Safe Deposit & Trust Company of Baltimore vs. Berry, that observation and experience teach that there is danger of reaching inaccurate conclusions as to a testator's mental capacity if much reliance is placed on expert testimony founded exclusively on mere hypotheses. The expert, not having seen the individual about whose sanity he speaks, must rely solely on hypothetical statements of facts assumed to have been deposed to by other witnesses, which facts may have been colored by the persons who narrated them, or may be erroneously interpreted in their presentation to the expert, while the expert himself may be mistaken in the deductions he draws, even when the facts have been accurately rehearsed. Added to these sources of uncertainty, there is, and probably it is quite natural that there should be, more or less unconscious bias towards the side upon which the expert is employed; and, as a consequence, it is no unusual thing to see equally intelligent and equally honest experts arriving at diametrically opposite conclusions from precisely the same hypotheses. This anomaly, however, is not confined to alienists, but exists among experts on handwriting and on other subjects as well. But it is, for all of these reasons, the court declares, of the utmost importance, when the testator is not present to speak for himself, or to be seen by the jury, or to be personally examined as to his mental condition, that especial care be taken by the courts to restrict, within the narrowest limits consistent with settled rules of law, what the court terms, this hazardous species of evidence. Now, it goes on to say, as the opinion sought from the expert must have relation to the subject-matter being inquired into, it is obvious that it must be based on the facts proved, or tending to prove which there has been some evidence offered. It can not be founded on the mere naked conjectures, conclusions, or inferences of witnesses, because those conjectures, conclusions, or inferences might not represent the real conditions which existed, and thus there might be substituted by the expert, for a deduction which he could have properly drawn from the facts as they really were, precisely an opposite conclusion, at variance with the facts, and utterly false, because deduced from erroneous premises. Then, if this be so, much more is it certain, it says, that it would be improper to ask an opinion on a conjecture or conclusion or inference, not of a witness, but of the counsel who propounds the interrogatory. Again, the court says that it is perfectly self-evident that a question which is propounded to prove is essentially inadmissible. That is to say, a hypothetical question obviously cannot assume as true the ultimate thing to be proved.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

New York Medical Journal, August 17.

1 *The Present Status of the Surgery of the Prostate. William N. Wishard.
2 *Infection Spread by Domestic Pets—Resemblances Between Diseases of the Lower Animals and of the Human Subject. William B. Meany.
3 *Hot Air as a Therapeutic Agent. Orrin S. Wightman.
4 *Dysentery in the Philippines. M. H. Bowman.
5 Antisepsis in Throat and Nose Surgery. Henry Wallace.
6 *Some Observations on the Relation of the Alkalescence of the Blood to the Urinary Reaction. Heinrich Stern.

Boston Medical and Surgical Journal, August 15.

7 *Demonstration of a Model of the Abdominal Viscera. Thomas Dwight.
8 *The Origin of Oxalic Acid from Protein and Protein Derivatives. Arthur E. Austin.
9 Bile in the Abdominal Cavity. John F. Thompson.

Medical Record (N. Y.), August 17.

10 *Syphilis of the Liver. Max Einhorn.
11 *Pregnancy Following Myomectomy. James N. West.
12 The Summit Fissure. Oversphere and Undersphere. Wallace Wood.
13 *Notes on Malarial Fevers in Central America. J. Hobart Egbert.

Medical News (N.Y.), August 17.

14 *Fibroma of the Mesentery. J. B. Murphy.
15 *Arsenic and Its Compounds; With Special Reference to Soda Cacodylate. Charles Wm. Heitzman.
16 Acute Peritonitis: Its Treatment upon an Etiological Basis. C. D. Hill.
17 *A Plea for the Better Appreciation of the Limitations of Operative Work. A. M. Cartledge.
18 The Etiology of Melancholia. H. H. Stoner.

American Medicine (Philadelphia), August 17.

19 *Expectant Treatment. (Concluded.) A. Jacobi.
20 *Some Observations on the Treatment of Acute Insanity in General Hospitals. Daniel R. Brower.
21 *A Report of 212 Cases of Ventrosuspension of the Uterus. Richard F. Woods.
22 A Case of Gastritis Complicated by Myasthenia Gastrica, with Remarks on Weakness of the Gastric Muscle. Edwin Zugsmith.
23 *A Study of the Hemorrhoidal Circulation, with Special Reference to the Prevention of Postbleeding in Radical Operations for Piles. Will B. Davis.
24 Congenital Malformation of the Vagina; Report of Two Cases. M. J. Konikow.
25 *The Sodium Tungstate Test for *Combined Chlorid in Chyme.* A. L. Benedict.

Philadelphia Medical Journal, August 17.

26 Slow Pulse with Special Reference to Stokes—Adam's Disease. Robert T. Edes.
27 *Progressive Hardness of Hearing and Its Arrest by Surgical Removal of the Incus. Charles H. Burnett.
28 The Difficulties Attendant upon the Proper Treatment of Diseases of the Ear in Dispensary Practice. Francis R. Packard.
29 *Meniere's Disease. S. MacCuen Smith.
30 *A Nosological Study, from a Clinical Standpoint, of Certain Manifestations Accompanying and Following Malaria. G. W. Penn.

St. Louis Medical Review, August 17.

31 *Some Complications of Syphilis of the Skin and Their Treatment. Martin F. Engman.

Cincinnati Lancet-Clinic, August 17.

32 The Physiology of Deglutition. Wm. H. Muhlberg.
33 Some Experience in Taking Rest and Recreation by a Busy Physician. Geo. J. Monroe.
34 "While There's Life, There's Hope." H. V. Sweringen.

Medical Age (Detroit, Mich.), August 10.

35 Some Surgical Cases. (Cholecystotomy, etc.) (To be continued.) N. Senn.
36 Correction of Eye Affections with Glasses. Robert M. Lapsley.

American Journal of Obstetrics (N. Y.), *August.*

37 *Post-operative Sequelæ and Conservative Gynecology. Frank R. Oastler.
38 **Pus in Abdominal Operations.* Hunter Robb.
39 *Is the Kraske Operation Justifiable in Women? George M. Edebohls.
40 *Ovarian Cysts.* R. S. Hill.
41 *Sactosalpinx Hemorrhagica. Ralph Waldo.
42 Cesarean Section, with Report of a Successful Operation on Patient with a Rachitic Pelvis. E. C. Davis.
43 *Ovarian Symptoms and Their Value as Evidence of Ovarian Pathological Conditions. L. W. Atlee.
44 Cesarean Section versus Craniotomy. Frank T. Meriwether.
45 Treatment of Abortion. Charles B. Reed.

American Practitioner and News (Louisville, Ky.), June 15.

46 Tuberculosis of Childhood. B. C. Frazier.
47 *Surgical Emergencies from a Medicolegal Standpoint; An Authentic Case. C. C. Godshaw.

Archives of Pediatrics (N. Y.), August.

48 *A Study of 555 Cases of Summer Diarrhea Among the Out-Patient Poor. Charles G. Kerley.
49 Case of Arteriosclerosis. Allen Baines.
50 *The Treatment of the Nasopharynx in Scarlatina. A. Seibert.
51 A Case of Appendicitis in an Infant Seven Weeks Old. George Blumer and H. L. K. Shaw.
52 Nodding and Rotatory Spasm of the Head, with Nystagmus in Rachitic Children. Augustus A. Eshner.

Medical Fortnightly (St. Louis), August 10.

53 Frank C. Hoyt, Physician, Editor, Alienist. Gershom H. Hill.
54 The Prevention of Tuberculosis. A. N. Bell.
55 Diseases of the Lungs and Pleura. (Continued.) Albert Abrams.

Western Medical Review (Lincoln, Neb.), August 15.

56 *Two Rare Tumors: 1, A Calcareous Uterine Fibroma, and 2, a Fibromyoma of the Urethra. H. G. Wetherill.
57 Observations in Modern Smallpox. M. L. Hildreth.
58 *A Few Notes on the Recent Epidemic of Smallpox. S. R. Towne.
59 Hay Fever. Carroll Eugene Cook.
60 *Tuberculosis of the Fascia. J. Clark Stewart.
61 Tuberculosis of Tubes, Ovaries and Peritoneum. R. E. Cutts.
62 *The Treatment of Tuberculosis of Bones and Joints. James E. Moore.

Pediatrics (N. Y.), August 15.

63 *Hemophilia Neonatorum. K. G. Wm. Greef.
64 Clinical Demonstration at the Post-graduate Medical School and Hospital. Augustus Caille.
65 *Hemorrhagic Disease of the New-Born—A Clinical Report of Two Cases. Adelaide Brown.

Kansas City Medical Record, August.

66 *School Hygiene in Reference to Transmissible Diseases.* John Wilson.
67 Summer Diarrhea of Children. E. J. Veidt.

Chicago Medical Recorder, August.

68 *On Streptothrical Infections. John H. Musser.
69 *Mental Therapeutics in Nervous and Mental Diseases. Richard Dewey.
70 Cutaneous Anthrax—Malignant Pustule. J. M. G. Carter.
71 A Preliminary Report of Some Observations of the Blood in Anemia. Joseph A. Capps.
72 Report of a Case of Gastrointestinal Infection. W. E. Harwood.
73 *Fourth of July Tetanus. H. Gideon Wells.

Iowa Medical Journal (Des Moines), August 15.

74 The Diagnostic Value of Pain in Intra-abdominal and Pelvic Diseases. D. S. Fairchild.
75 Perineal Cystotomy. D. W. Finlayson.
76 Gonorrhea. Charles D. de M. Sajous.

Indiana Medical Journal (Indianapolis), August.

77 *A Consideration of the Present Laws for the Commitment of the Insane of Indiana. Wm. B. Fletcher.
78 Dysmenorrhea. L. H. Dunning.
79 The Diagnosis of Acute Peritonitis. H. O. Pantzer.
80 *Feather-beds and Colds. Robert Hessler.
81 Kitasato, the Japanese Pathologist—The Plague in Manila. Frank W. Foxworthy.

St. Louis Courier of Medicine, July.

82 Should Gonorrhea Be Considered as a Local or Constitutional Affection? F. R. Sturgis.
83 The Early Recognition and Treatment of Pulmonary Tuberculosis. Alexander McPhedran.
84 The Teaching of Therapeutics. T. M. Rotch.
85 Psychoneurosis. G. P. Edwards.
86 *Subphrenic Abscess in Its Relation to Some Complications. J. McF. Gaston, Jr.
87 *The Present Position of the Diagnosis of Cancer of the Stomach. Alois B. Graham.
88 Report of a Case of Anthrax. Amand Ravold.

Ophthalmic Record (Chicago), August.

89 *Advancement, Forms of Operation and When Indicated. Francis Valk.
90 *Chalazion. Albert B. Hale.
91 Hereditary Binocular Ophthalmoplegia. C. F. Heard.
92 Syphilitic Retinitis. Harry Friedenwald.
93 A Case of Spontaneous Couching of a Congenitally Dislocated Lens. T. B. Schneideman.
94 Simplified Form of Stereoscope. Charles A. Oliver.
95 Simultaneous Rupture of the Choroid and Paretic Mydriasis, Without Paresis of Accommodation. Alexander Duane.
96 A Lid Retractor. William E. Baxter.

Memphis Medical Monthly, August.

97 Some Remarks on Practical Obstetrics. I. A. McSwain.
98 Congestive Fever. Sydney Thompson.
99 Empyema, with Report of Cases. O. S. McCown.
100 *Our Recent Epidemics of Smallpox, and the Failure of Glycerinated Lymph. F. J. Runyon.
101 Voice Preservation. Richmond McKinney.
102 The Management of the Consumptive. C. M. Sebastian.

Columbus Medical Journal, July.

103 Rapid Dilatation of the Eustachian Tube by Electrolysis a Factor in Treatment of Chronic Catarrhal Otitis Media, with Report of Cases. C. P. Linhart.
104 Chronic Otitis Media Complicated with Mastoid Cholesteatoma and Cranial Abscess: Operation, with Report and Exhibition of the Case. Andrew Timberman.
105 Pleurisy in Children. T. W. Rankin.
106 More Amicable Relations Between Physician and Pharmacist. A. M. Steinfeld.
107 "Caffeine." George B. Kauffman.

Denver Medical Times, August.

108 *The Necessity for Post-Graduate Instruction in Sanitary Science: Psychopathic Cults of Healing and Worship. Wm. P. Munn.
109 *A Report of One Hundred Cases of Typhoid Fever—Seen in Private Practice During the Fall of 1900. W. A. Kickland.
110 The Present Status of Nephrorrhaphy. C. K. Fleming.
111 *An Outbreak of Pyemia Suggesting Bubonic Plague. J. N. Hall.
112 Slight Ailments and How to Cure Them. M. Beshoar.
113 Keloid: Vitiligo: Alopecia: Circumscripta; Ichthyosis. John V. Shoemaker.
114 Address to the Berks County Medical Society by the Retiring President. F. W. Frankhauser.
115 The Therapeutic Benefit of Music. John V. Shoemaker.

New Orleans Medical and Surgical Journal, August.

116 *The Nose and Throat in Their Relation to Diseases of the Chest. William Scheppegrell.
117 The Importance of an Early Diagnosis in Tuberculosis. James Kilbourne.
118 *The Combination of Chloroform and Nitrite of Amyl. Paul A. McIlhenny.
119 A Case of Malarial Remittent Fever Treated with Large Doses of Arsenic. C. J. Gremillion.
120 A Case of Malarial Polyneuritis. C. J. Gremillion.
121 Clinical Test of Sodium Cacodylate. E. M. Dupaquier.
122 A Case of Malignant Pustule of the Lip—Recovery. T. S. Dabney.
123 A Case of Abdominal Pregnancy. L. G. Stirling.

Medical Standard (Chicago), August.

124 Drug Habits and Their Treatment. T. D. Crothers.
125 Narrowing of the Anus; Stricture; Hemorrhoids. J. Rawson Pennington.
126 Appendicitis and Its Treatment. A. J. Ochsner.
127 Streptococci Infection Complicating Abortion—Recovery. E. J. Clark.
128 Empyema: A Discussion of the Condition and Its Surgical Treatment. Aime Paul Heineck.

Texas Medical News (Austin), July.

129 *Uncinariosis (Anchylostomiasis) in Man and Animals in the United States. Ch. Wardell Stiles.
130 Cholera Infantum. M. M. Pool.
131 Quarantine and Sanitation: Their Mutual Relations and Importance. I. J. Jones.
132 Post-Partum Hemorrhage. B. S. Ezell.
133 Typho-Malarial Fever. E. H. Gray.
134 Summer Diarrheas of Children and Their Treatment. M. A. Auerbach.

New England Medical Monthly (Danbury, Conn.), August.

135 *The President's Address, American Medical Association. Charles A. L. Reed.
136 *Internal Medicine in the Nineteenth Century. N. S. Davis, Jr.
137 *The Value of Clinical Microscopy, Bacteriology, and Chemistry in Surgical Practice. (To be continued.) John A. Wyeth.
138 Chronic Gastritis. Charles J. Polland.
139 Uricacidemia. Edmond John Melville.

Texas Medical Journal (Austin), August.

140 The Robert-Hawley Goat Lymph Compound. W. P. King.

AMERICAN.

1. **Surgery of the Prostate.**—After reviewing the various methods of treatment of prostatic pathologic conditions, Wishard sums up by saying that operative procedures are of the greatest value when undertaken early and that when they are long deferred, serious resultant bladder, urethral and renal diseases make the outcome increasingly dangerous. Where the catheter has failed to give adequate relief, death is reasonably certain to occur before long, especially in cases where the urethra has greatly increased in length by elongation of its prostatic end, unless the suprapubic opening for either prolonged drainage or removal of obstruction is obtained. If the symptoms are not of a severe type and are not amenable to the catheter, and if the length of the urethra from the meatus to the point where the urine is obtained does not exceed nine inches a perineal opening generally affords opportunity for stretching the entire length of the prostatic urethra, for dividing the small collar-shaped growths around the bladder end of the canal, and for removing the small projections by the finger, forceps, or cautery. One-fourth or as asserted by some, one-third of the operative cases are suitable for perineal opening. If the suprapubic operation has been thoroughly done and the obstruction all removed, the patients afterward are assured of more perfect bladder function than by any other method. He thinks it must be conceded, however, that in view of the serious dangers involved, many patients should be subjected to nothing more than the formation of a suprapubic channel, as suggested by McGuire and modified by Morris. Morris' improvement lines the channel with skin, and hence it is not so apt to contract.

2. **Infection by Animals.**—The dangers of the spread of infection by domestic animals, birds, cats, etc., are remarked upon by Meany and probable instances related. He refers in conclusion to the principle of isolation now insisted upon by sanitarians and favors the tendency of well-to-do individuals to be treated in hospitals rather than at home.

3. **Hot Air.**—The hot-air treatment and its advantages are noticed by Wightman, who sums up as follows: 1. Dry heat is a valuable pain-reliever without any of the depressant effects common to drugs. 2. In connection with constitutional and medicinal treatment, we have in it a positive curative agent. 3. It is a stimulant to rapid repair and absorption. 4. It is one of the most valuable eliminative agents we possess. 5. Where indicated, it possesses a sedative action on the nervous system obtained by no other means.

4. **Dysentery in the Philippines.**—Bowman holds that Cruikshank's researches have shown that dysentery in the Philippines is not a single, but two distinct and separate diseases, acute dysentery due to the bacilli of Shiga, which does not produce abscess of the liver or ulcer of the colon but acts similar to cholera, though requiring four, six or twelve days before its termination or crisis; and amebic dysentery which invades the layers of the *colon* producing punched-out ulcers

and also invades the liver producing characteristic lesions. There are two varieties of the ameba which vary in nowise except in size, the pathologic variety somewhat larger than the nonpathologic, and these two varieties have been the cause of all the confusion regarding the ameba as the etiologic factor in dysentery. He submits the following conclusions: 1. The duality of dysentery is proved. 2. Acute dysentery is the result of infection with the bacillus of Shiga. 3. It is infectious in the same way that the bacillus of typhoid fever is infectious. 4. Amebic dysentery is caused by an ameba. 5. There are both a pathogenic and a non-pathogenic ameba, which fact has produced much confusion regarding the ameba as an etiological factor. 6. The lesions of amebic dysentery differ from those produced by the bacillus of Shiga. 7. The therapeutic agents generally used for the treatment of acute dysentery are in no way curative. 8. Magnesium sulphate should be included in this list. 9. Quinin solution is a specific for the amebic dysentery, but its employment in rapid, acute ulcerating cases is fraught with danger, and from the nature of the lesions it cannot be retained for a sufficient length of time to produce beneficial effects.

6. **Blood Alkalescence and Urinary Reaction.**—From two series of observations on himself Stern offers the following inferences; from the first series he concludes, 1. The higher degree of urinary acidity concurs with a lessened blood alkalinity and the increased alkalescence of the blood with a decline of the urine's acidity. 2. There is no permanent and absolute ratio between blood alkalescence and urinary acidity. 3. The blood, under normal conditions, possesses a certain inherent alkalinity. The degree of alkalescence possibly varies slightly for certain periods of the twenty-four hours, but the influence of the ingesta upon these variations is neither a material one nor always determinable. 4. The degree of blood alkalinity is normally not affected by the quantity of the ingesta. The quality of the nutritives may normally contribute toward the rise and fall of the blood's alkalinity, but only to a very limited extent. 5. A portion of the substances elaborated from the nutriment will be egested without having been conveyed to the blood. 6. Some of the nutritive material, isolated and not utilized in anabolism, may be transferred into the urine in a more direct manner, and thus the accidental variations in the urinary reaction may be partly explained. The second series of observations were taken with the object of rendering the urine alkaline and studying the eventual relationship between urine alkalinity and the concurring degree of blood alkalescence. He recapitulates the data from this in the following: 1. A number of drugs effect the alkalinization of the urine without causing a corresponding increase in the degree of blood alkalinity. 2. The transitory augmentation of blood alkalinity, recurring mostly during certain hours of the afternoon, seems to be the result of certain innate processes, which apparently proceed independently of the ingestion of food or drugs. 3. While a higher degree of urinary acidity may concur with a more marked alkaline condition of the blood, a lower degree of urinary acidity, called forth by the introduction of a drug, may coincide with a lower degree of blood alkalinity on one and the same day.

7.—This article has appeared elsewhere. See THE JOURNAL of August 10, title 58, p. 406.

8. **The Origin of Oxalic Acid.**—Austin's article is a review of Salkowski's investigations and a description of his methods, which lead him to the following conclusions: 1. Oxalic acid is derived from the carbohydrate group in albumins, presumably through the intervention of glycocoll by a process of splitting, through which the remainder is converted to urea, a vital process though imitated by strong oxidizing agents. 2. Oxalic acid may also be derived from uric acid by fermentative action and oxidizing agents, and perhaps also by vital processes. 3. Oxalic acid, present in many organs of the body, practically absent in the feces of animals fed on non-oxalic acid containing foods, yet ever present in the urine after long periods of fasting, may rightly be called a metabolic product and rightfully take its place with acetone, lactic, acetoacetic and oxybutyric acids as a measure of abnormal retrograde metamorphosis.

10. **Syphilis of the Liver.**—The first part of Einhorn's article reviews the literature on the subject and it seems that syphilis of the liver is not infrequent. He divides it into three classes: 1. Gummata. 2. Syphilitic cirrhosis. 3. Syphilitic disease of the liver belonging to either of the above groups, and accompanied with icterus, either acute or chronic. Several cases illustrating these groups are reported with diagrams illustrating the extent and character of the disease. In the majority of the cases pains in the right hypochondrium are present, either constantly or intermittently; in the latter case they are severe, resembling gall-stone colic. We also have digestive disturbances, eructations, constipation, and more rarely diarrhea. A feeling of tension in the upper part of the abdomen is often met with and general malaise, restless sleep, weakness, moroseness, etc., and gradual loss of weight. Icterus may be acute or become chronic. No matter to which one of the above groups the morbid process belongs, the organ is usually more or less swollen in the right mammillary line between the free border of the ribs. Gummata may be sometimes recognized as uneven, round, hard nodules on the surface. If there is a cirrhotic process a marked swelling is encountered and in advanced stages an amyloid degeneration occurs. The organ then presents a harder and smoother appearance than normally. Enlargement of the spleen is not of uncommon occurrence; ascites may occur late. Diagnosis can be most positively made where gummata exist with other signs of recent or present attacks of syphilis. It is more difficult when tumors are present without other signs of existing syphilitic processes or without history; specific treatment may be required to confirm it. It is less certain when we have simply an enlarged, somewhat indurated liver, with or without icterus. Syphilitic cirrhosis resembles the ordinary hypertrophic cirrhosis so much that they are hard to clinically distinguish. Gummata are usually confounded with malignant neoplasms. If the disease has lasted for some time, with syphilitic manifestations, and no considerable loss of weight, it is probably syphilitic, but a slow, steadily progressive affection of the liver without intermission and with loss of weight and strength, and with neoplasm, the condition is, practically speaking, malignant. According to Neusser an increase of eosinophile cells in the blood points to syphilis. Alcoholic cirrhosis may be confounded, but the antiluetic treatment or the history may help to decide. It would appear from the literature that the prognosis is rather grave, but Einhorn seems to think if the diagnosis is made before the patient loses too much strength and before grave symptoms have yet occurred, the prognosis is very favorable. Of the 10 cases he reports only one died, and even this one had been considerably benefited; all the others were either permanently cured or much improved. Treatment is necessarily specific; the iodids play an important rôle, and while these may alone be sufficient, he has seen the best results from the combined use of this drug with mercurial inunctions. Special symptoms should be attended to: Icterus can be helped by using glycerin, a teaspoonful three times a day, one-half hour before meals. Iron and arsenic for anemia; special measures for ascites may be required. Proper hygienic and dietetic treatment is essential.

11. **Pregnancy Following Myomectomy.**—A number of cases from the literature are reviewed by West, and one is here reported by him; 14 in all, with 18 pregnancies, 3 patients having been twice pregnant. Of the 3 patients who were twice pregnant there were 2 healthy children born and 9 healthy children born to 14 at normal term. Two children went to term and were born dead. There were 6 abortions, most occurring in the third or fourth months; while all the uteri had extensive scars, in only 2 cases was it necessary to use forceps. All the presentations were normal. In the author's case in which nine incisions had been made into the uterine tissue, the labor lasted twelve hours and expulsive force was ample, the only complication being a lacerated perineum.

13. **Malaria in Central America.**—Egbert finds that fleas are active agents in transmitting malaria in the region of Honduras, where he made his observations. Mosquitoes were almost unknown.

14. **Fibroma of the Mesentery.**—Murphy reports a case and discusses the condition. He has been able to find in the literature not more than 11 similar cases. The gravity of the operation for mesenteric fibroid or malignant tumor is considerable on account of the shock and hemorrhage. In most cases of simple and encapsulated fatty tumors and cysts, however, the conditions are entirely different from fibroma or malignant disease. Statistics show that 28 per cent. of the cases recover by simple aspiration. Where the cysts have been tapped and fixed in the abdominal wound, there has been a mortality of 5 per cent., while where it has been directly removed the death-rate has reached 52 per cent.

15. **Soda Cacodylate.**—After noticing the use of arsenic under various conditions, Heitzman reports brief histories of a number of cases where cacodylate of soda was used. He thinks the drug is eminently adapted to cases requiring large doses of arsenic and is absolutely safe even in massive doses, being apparently non-toxic. It may be given hypodermically in doses of 1.5 gr. daily and up to 6 gr. daily by the mouth or rectum.

17. **Limitations of Operative Work.**—Cartledge pleads for more conservatism in operation. He thinks that there has been too much of a craze for operating, especially in abdominal cases and too many tyros have attempted it. He says, given a case where the focus of virulent infection has suddenly emptied its contents into the peritoneal sac at some point, either at the appendix, a septic tube or an intestinal lesion, if the sepsis has rapidly augmented, spreading to the entire peritoneal covering, characterized by no adhesion of limitation and manifesting itself objectively by a pulse-rate of 140 or 160, great abdominal distention, paresis of the intestine from toxemia and gas which precludes the possibility of attaining results from purgation, and the destruction of abdominal breathing—under such circumstances he does not believe that any surgical operation which has for its purpose the administration of an anesthetic, opening the peritoneal cavity with its subsequent drainage, can be other than productive of the greatest harm and hasten the usual disastrous termination. In reply to the argument which is usually made, that if 2 patients out of 100 can be saved, operation would be still justifiable, he answers that from a painstaking observation of a number of cases he is led to the belief that 5 per cent. would be saved by Nature, aided by such measures as sustaining the patient's heart, saline infusion, etc. Of course, the question will arise as to the accuracy of the diagnosis, but he is sure that we have all in the past operated on many of these cases that were hopeless and have swelled our mortality list and brought surgery into disrepute. Other unfavorable conditions than general septic peritonitis are mentioned, such as jaundice, renal insufficiency, ovarian and uterine cancer; here we can hold out but little promise of any recovery.

19. **Expectant Treatment.**—Jacobi commences with reporting some of his own early mistakes which he says still reveal themselves on sleepless nights even after nearly half a century, and he lays down the following platform, which he thinks should be adopted by the profession: In order to obtain indications for treatment, make a diagnosis. That art is becoming both more accessible and, through honest and hard work, more easy with the aid of modern methods. Remember that most diseases have, indeed, a tendency to spontaneous recovery, but also that recovery is not always complete and that invalidism should not be invited through neglect of treatment. Complications are possible as long as an illness lasts, and with every day cut short, the dangers of an otherwise typical disease are diminished. The experience of old men in the profession who claim they employ less drugs with advancing years, means sometimes either an inability to master new methods of diagnosis, or the knowledge of new medicines or physical remedies. There is no one treatment for a disease adapted to every patient. There is no such thing as a uniform treatment for pneumonia, or for typhoid fever, or, even in spite of antitoxins, for diphtheria or tetanus. We should not try to treat the name of an illness, but the patient.

20. **Treatment of Insanity in the General Hospital.**—Brower points out certain defects in public hospitals for the insane at the present time, that they are too large for proper individualization, too far from the homes of the patients and antiquated, cumbersome, and unscientific in their methods of admission. Also their degradation by politicians which has been too much the case in some of the states. He believes in the advantages of treatment of insanity in general hospitals, in special wards if necessary.

21. **Ventrosuspension.**—From 212 cases of ventrosuspension tabulated from the case-books of Drs. Penrose and Beyea, Woods deduces the following conclusions: 1. That the course of subsequent pregnancies and labors do not seem to be impeded by this operation. 2. That the operation in the great majority of cases carefully selected gives excellent results, and the relief experienced is lasting. 3. That it restores the normal condition of the uterus, and does not substitute a fixed unnatural anteflexion. 4. That the risk is minimum, and the danger from hernia very slight. 5. That by including a small amount of muscular tissue we increase the strength of the ligament without risk to the patient.

23.—See abstract in THE JOURNAL of July 13, p. 137.

25. **Sodium Tungstate Test.**—Benedict has noticed the following in his experience with the sodium tungstate test for combined chlorid in chyme. He was surprised to find that using dimethylamidoazobenzol, the free HCl seemed to have entirely disappeared, that is to say, the red color was lacking from chyme in which sodium tungstate had been dissolved, though previously present, while the total acidity had not correspondingly decreased. He repeated the tests three times, once using heat to dissolve the sodium tungstate. In all three instances the results agreed within the usual limits. The total acidity by phenolphthalein was 88 to 90 degrees free HCl by dimethylamidoazobenzol 50 to 60 degrees. After adding sodium tungstate the diminution of acidity was from 20 to 30 degrees. The diminution corresponding to combined chlorids by alizarin was 19 degrees. The large variation in the application of the tungstate test was one of method, not of inaccuracy. The lower reading—higher reading of total acidity—occurring when the first appearance of a distinct reaction with phenolphthalein was noted; the higher reading —lower total acidity—occurring when, after a lapse of 5 to 10 minutes, repeated increments of sodium hydrate solution were added as the end reaction faded. This fading of end reaction always occurs to some extent, especially when unfiltered chyme is used, owing to the slow neutralization of undissolved particles of proteid. In the present instance the chyme was decanted but was unusually free from such particles. The same chyme, without adding sodium tungstate, did not show a corresponding recrudescence of the end reaction. This phenomenon could not be due to an imperfect preliminary solution of sodium tungstate, as just the opposite effect would have been produced by the gradual solution and consequent diminution of acidity. His first thought, on noting the absence of color with dimethylamidoazobenzol was that the free HCl had also been neutralized, but this was obviously not the case, as the whole diminution of acidity did not equal that due to free HCl.

27. **Incudectomy.**—Progressive hardness of hearing or so-called chronic catarrh of the middle ear is, according to Burnett, associated with impaction of the stapes, and its liberation by the removal of the incus and consequent interruption of the retractive power of the tensor tympani, relieves the condition tinnitus aurium, and ear vertigo disappears. While it can improve the hearing only slightly in the ear affected, the progressive nature of the disorder is altered and the disease arrested. He has been able to observe closely some of the cases first operated on 13 years ago and finds

foods. One hundred and fifty-seven cases were of twenty-four hours' duration before first seen; 197 had been ill from two to five days, and 76 from five to ten days; 111 had had diarrhea over ten days, and 11 had been ill for two weeks. With some there was simply so-called dyspeptic diarrhea with moderate fever and slight prostration, others had been ill for several days with high fever and were in a critical condition. Nearly one-half recovered within a week. Quite a number lingered along until the fourth or fifth week and some for several months. In 56 the treatment was not continued. Out of 449 treated to the conclusion of their illness, 10 died, the death-rate being a little over 2 per cent. There was one invariable rule of treatment and that was to stop the milk at once. It would be impossible to the great mass of physicians to differentiate bacteriologically the nature of the infection in a large proportion of cases; this has been impressed upon him by considerable autopsy experience. We learn that every case of summer diarrhea must be looked on as dangerous and treated vigorously whether the initial symptoms are mild or severe. He doubts whether, in the majority of cases, the streptococcus or colon bacillus play a very important part. The average case is of gradual onset. If the milk is discontinued, a substitute must be found and the one he finds most useful is cereal water, usually barley water, and where this does not answer, rice water. The directions are: Robinson's baked barley flour, two tablespoonfuls, water one pint, boil for twenty minutes, strain and add water to make one pint when the cooking is completed. Rice is similarly treated. Brandy and whiskey should never be given to children with summer diarrhea, as the dangers of nephritis and stomach involvement are enough without provoking them with liquors. Animal broths should not be added to the diet in too large amounts on account of their laxative effects, but he uses them moderately and with care. Brandy and egg water mixture, so popular with many, is an atrocious milk substitute. Dextrinized gruels have a useful field in summer diarrheas, the dextrinization being of value as it offers more concentrated nourishment. Care should be taken that the cereal water is not at a higher temperature than 100 F. The substitute diet should be allowed to be given at two-hour intervals, if the child will take and retain it in good quantities. Boiled water may be given at any time. The patient should be kept in the largest room, and if there is fever, sponged in cold water for fifteen minutes several times a day. The milk diet is resumed gradually, diluting the barley water, with slight increase every day or every other day, according to the condition of the stools. Various drugs were tried after the initial dose of castor oil. The newer tannin preparations were used in about 50 cases. There are four that may be relied on as of use in this condition, they are, calomel, castor oil, bismuth and opium. The two first were given in every case, and in 26 they were the only ones given. Calomel is preferred in cases where there is vomiting or a tendency thereto and when the case is not particularly urgent 1/20 to 1/10 of a grain at hour intervals. Castor oil is given in all septic cases with infrequent stools and without stomach involvement, in which a prompt washing out of the small intestine is desired. Bismuth was given in 432 cases and frequently large doses, not less than 10 grs. every one or two waking hours regardless of the age of the patient. To be of service it must produce black stools, that is, to be converted into sulphide in the intestine. If it passes through the bowel unchanged, sulphur should be supplied in the form of precipitate of sulphur, a 1-gr. powder given with each dose of bismuth. Opium is indicated if there is pain, tenesmus and frequent stools, and he has found it necessary to use it in 200 of his cases. Four or five passages a day are required to maintain drainage. But when the case is one of intestinal infection with infrequent foul stools or no stools at all, active laxatives are the only medication. Many children die because of the physician's idea that the diarrhea must be stopped. Kerley is not in favor of too frequent bowel irrigation as it may produce injury, straining, distension, etc. He usually employs a normal salt solution, luke warm, if there is high fever. Where there is blood in the stools he has used tannic acid, though he doubts its special value. The method he employs is the soft rubber catheter, No. 14, English, attached to a fountain syringe, the bag of which is held three or four feet above the child's body. When the catheter has been introduced about two inches the water is allowed to pass in slowly, filling the colon. This in a child eighteen months of age will require twenty-four to thirty ounces of water. When this or a lesser amount, at least one pint, has passed in, it is allowed to run in and out at the same time. The general management of the child is important; instruction should be given as to the care of bottle and nipple. He thinks that dispensaries do excellent work in instructing mothers how to care for their children. The municipalities should establish milk laboratories and ice stations for the poor, where these necessities may be obtained free or at a very small cost.

50. **Scarlatina.**—One of the graver dangers of scarlatina is in the invasion of the mucosa of the nasopharynx by bacilli causing scarlatinal sore throat, viz., streptococci. Seibert uses for this condition a prescription composed of tincture of iodin, 2 grams; potassium iodid, 1 gram; distilled water, 120 grams; carbolic acid, 10 drops. A teaspoonful of this mixture is administered every hour. An experience of twenty years has failed to show any carbolic intoxication with this mixture. Mild iodism and slight gastric pains may temporarily be produced. To clean and disinfect the infiltrated mucosa he employs irrigation with 1 to 5 per cent. warm solution of ichthyol repeated every six hours where the infiltration begins to obstruct the passageway between the nares. Where these are insufficient, more vigorous measures are required. During the past year he has treated six cases with local applications of 50 per cent. resorcin solution in alcohol, which he has also employed for the last eight years for the treatment of post-nasal catarrh in infants and children. He reports a case of scarlatinal nasopharyngitis treated with this prescription. He considers it imperative to attempt to destroy the pathogenic bacteria in scarlatina whenever they come within our reach and these resorcin-alcohol applications have proven themselves harmless and are indicated, he considers, whenever the nasopharynx becomes involved.

56.—See abstract in THE JOURNAL, xxxvi, p. 128.

58. **Smallpox.**—Towne thinks that modern sanitation has mitigated this disease, and it is not impossible but there may have been an acquired immunity through the vaccination of generations. The hesitancy with which the diagnosis has been made in this epidemic is due to various causes, inexperience with the disorder being one cause.

60.—See abstract in THE JOURNAL, xxxvi, p. 128.

62.—Ibid.

63. **Hemophilia Neonatorum.**—The nature of hemophilia has not been cleared up and Greef reviews the theories and findings in congenital cases. Three cases are reported, in two of which postmortems were made. He is inclined to believe that the condition rests upon abnormal permeability of the vascular walls. The large majority of children succumb and little can be done by treatment. He is inclined to think that many of the cases classed as meleua neonatorum were fatal cases of hemophilia.

65. **Hemorrhagic Disease of New-Born.**—Brown reports two cases of hemorrhagic disease of the new-born, the clinical history of which corresponds more exactly with the classified description of Buhl's disease. The ictero-cyanotic skin, extreme wasting, marked gastro-intestinal hemorrhage, eczema, absence of continuous temperature and time of occurrence make points of agreement. The treatment in case 1 was with gelatin tubes containing about 1 dram, heated and diluted and fed to the child with very marked perceptible effect. In the second case gelatin was used in another form and the hemorrhage rapidly decreased.

68. **Streptothrical Infection.**—Musser reports two cases of streptothrical infection, one which, although postmortem observation was lacking, was interesting as determining the

this result. The only explanation he offers is that the contraction of the tensor tympani, spasmodic in character, being overcome by the removal of the incus in one ear, the synergetic contraction of the tensor in the opposite ear induced by cross influence is also overcome by a beneficial cross influence emanating from the operation on the diseased ear. Several cases kept under observation are reported and the method of operation described. Since 1892 he has operated upon 53 cases of progressive hardness of hearing in order to break the retractive force of the tensor tympani, 41 times by incudectomy, 4 by resection of the long limb of the incus and 8 by tenotomy of the tensor tympani. Incudectomy he considers the preferable operation and proposes to present the results in a future communication.

29. **Meniere's Disease.**—The term Meniere's disease is criticized by Smith, who holds that, if it means anything, it must be restricted to that complexity of symptoms at present recognized as the outcome of what is termed apoplexy of the labyrinth and this must be primary and occur suddenly in patients previously free from ear trouble and enjoying excellent health at the time of the attack. Thus restricted, Meniere's disease is a most exceptional rarity, and if we exclude previous systemic disease as a causative factor, it must be regarded as the result of traumatism. The symptoms of Meniere's disease do not arise, as it seems to have been definitely shown, from a single disease of the labyrinth, but are more or less prominent in traumatisms and various other pathologic changes involving the ear and adjoining structures, and he asks would not the cause of otology be best served and confusion averted by adopting a nomenclature defining as far as possible the location of the various affections of the internal ear without the consideration of Meniere's disease. He thinks that in many instances, injuries to the brain substance proper are the cause of an inability to move in a forward direction. He offers the term tympanic vertigo as efficient and impressive, to distinguish between vertigo due to middle-ear disease and that involving other parts of the ear or neighboring structures.

30. **Malaria.**—The peculiar *x*-fever which follows malaria and is resistant to quinin in the South, is, according to Penn, best considered as post-malarial fever, a sequela of the estivo-autumnal form occurring in susceptible individuals or those whose condition is such as will permit the toxic effects of the germs to continue the fever after the germs have left the body. It is not, practically speaking, a malarial fever at all, nor is it a new fever, but it is a post-malarial fever. This accounts for the irregularity, the frequent mild type of the cases, and the time of their occurrence. He desires to call the attention of laboratory workers to this line of thought and suggests, if confirmed by investigation, the possibility of good effects from serum treatment or antitoxin in these cases.

31. **Syphilis.**—The skin complications of syphilis mentioned here by Engman are tuberculosis, epithelioma, blastomycetic infection, erysipelas, seborrhea, pyogenic infections, mixed chancre, trauma, and hemorrhagic syphilid. He also points out how iodin intoxication may be engrafted upon the syphilitic lesion.

37. **Post-Operative Sequels.**—It was the purpose of Oastler to obtain as far as possible the histories of post-operative sequels of about 200 cases of complete hysterectomy and double salpingo-oöphorectomy and 150 cases of more conservative operative procedures so as to compare the merits of the two. Of the 200 cases selected for the first series, the conditions were carcinomata, sarcomata, fibromata of the uterus, septic metritis, ovarian cyst, uterine rupture, pyosalpingeal abscess, tubercular salpingitis, hydrosalpinx and hematosalpinx and ectopic gestation. The methods employed, whether abdominal or vaginal, did not seem to make much difference. He finds that the symptoms of artificial menopause occur with more regularity and greater severity and are of longer duration than is generally supposed, some women being left invalids. The symptoms are dependent for the most part on removal of the ovaries rather than the uterus; therefore, after suprapubic hysterectomy, there is no indication for leaving the uterus. Also that many cases in which it has been customary to advise hysterectomy can be treated in future by more conservative methods, which have been mentioned, such as leaving the ovaries wherever possible, resecting cystic ovaries and implanting small portions of healthy ovary on the side of the uterus or broad ligament, resection of the tubes or seat of hydrosalpinx or hematosalpinx and draining pelvic exudates and cases of pyosalpinx by the vagina. These conservative methods do away with the artificial menopause, relieve symptoms, and allow patients to continue their sexual life with the possibility of pregnancy.

38.—See abstract in THE JOURNAL, xxxvi, p. 1650.

39. **Kraske Operation.**—Edebohls finds the Kraske operation objectionable; and recommends an operation consisting in removal of uterus, resection of cancerous bowel, and end-to-end anastomosis of the sigmoid and rectum, all performed at one sitting by anterior abdominal incision which he finds in every way superior. He claims its superiority over the Kraske procedure in cases of high carcinoma of the rectum in the following important particulars: "1. A preliminary colostomy and, in favorable cases, a secondary operation for the closure of the artificial anus becomes unnecessary. 2. Removal of the sacral glands and all affected tissues posterior to the rectum can be accomplished with greater facility and thoroughness. 3. The liver can be examined for secondary cancerous nodules immediately after opening the abdomen, and, if such nodules be found, the abdomen can be closed without inflicting further unnecessary operative injury upon the patient. The unavoidable conclusion to be drawn from the above premises is that the Kraske operation is never *justifiable in women.*"

41. **Sactosalpinx Hemorrhagica.**—Waldo reports two cases which he thinks demonstrate the fact that hemorrhagic accumulations in the tubes are not always due to ectopic gestation. They are carefully observed and reported and pathologic examinations made and appear to have been due to hemorrhage in the tube independent of any ectopic pregnancy.

43. **Ovarian Symptoms.**—The ovarian symptoms which are commonly attributed to inflammatory conditions are held by Atlee to be often due to other conditions than diseases of the ovaries themselves. He thinks certain other uterine pathologic conditions may cause symptoms most marked by pain referred to the ovaries and that in certain women whose health has deteriorated, though showing no pathologic condition beyond anemia of mild grade, symptoms referable to the ovaries are not infrequent. In women with neuralgic dyscrasia, if neuralgia develops in the lumbo-abdominal distribution, very confusing symptoms may arise, and in cases of oxyluria, symptoms referable to renal, ureteral or vesical dilatation may simulate or lead to a diagnosis of ovarian disease. Besides this we have two great neuroses, neurasthenia and hysteria, giving rise to symptoms simulating disease from pure pathologic conditions. The treatment is the correction of the morbid conditions giving rise to them and with a better diagnosis and understanding of these cases we find the indications for spaying narrowing themselves down to a very small figure as compared with those of the past decade.

47.—See abstract in THE JOURNAL, xxxvi, p. 1727.

48. **Summer Diarrhea of Children.**—An analysis of 555 cases of summer diarrhea was made at the out-patient department of the Babies' Hospital in New York during the months of June, July, August and September, 1900. The cases were all from the tenement population, the majority were under twelve months of age, and only 51 were over 2 years. About 14.5 per cent. were breast-fed, out of those under six months of age, and 10 per cent. between the ages of six and twelve months, though some allowance must be made for mothers' statements in this regard, as there are very few tenement breast-fed infants who are not given milk, soups, tea, etc. The larger proportion were fed on cow's milk diet wholly or in part. Very few took proprietary

foods. One hundred and fifty-seven cases were of twenty-four hours' duration before first seen; 197 had been ill from two to five days, and 76 from five to ten days; 111 had had diarrhea over ten days, and 11 had been ill for two weeks. With some there was simply so-called dyspeptic diarrhea with moderate fever and slight prostration, others had been ill for several days with high fever and were in a critical condition. Nearly one-half recovered within a week. Quite a number lingered along until the fourth or fifth week and some for several months. In 56 the treatment was not continued. Out of 449 treated to the conclusion of their illness, 10 died, the death-rate being a little over 2 per cent. There was one invariable rule of treatment and that was to stop the milk at once. It would be impossible to the great mass of physicians to differentiate bacteriologically the nature of the infection in a large proportion of cases; this has been impressed upon him by considerable autopsy experience. We learn that every case of summer diarrhea must be looked on as dangerous and treated vigorously whether the initial symptoms are mild or severe. He doubts whether, in the majority of cases, the streptococcus or colon bacillus play a very important part. The average case is of gradual onset. If the milk is discontinued, a substitute must be found and the one he finds most useful is cereal water, usually barley water, and where this does not answer, rice water. The directions are: Robinson's baked barley flour, two tablespoonfuls, water one pint, boil for twenty minutes, strain and add water to make one pint when the cooking is completed. Rice is similarly treated. Brandy and whiskey should never be given to children with summer diarrhea, as the dangers of nephritis and stomach involvement are enough without provoking them with liquors. Animal broths should not be added to the diet in too large amounts on account of their laxative effects, but he uses them moderately and with care. Brandy and egg water mixture, so popular with many, is an atrocious milk substitute. Dextrinized gruels have a useful field in summer diarrheas, the dextrinization being of value as it offers more concentrated nourishment. Care should be taken that the cereal water is not at a higher temperature than 100 F. The substitute diet should be allowed to be given at two-hour intervals, if the child will take and retain it in good quantities. Boiled water may be given at any time. The patient should be kept in the largest room, and if there is fever, sponged in cold water for fifteen minutes several times a day. The milk diet is resumed gradually, diluting the barley water, with slight increase every day or every other day, according to the condition of the stools. Various drugs were tried after the initial dose of castor oil. The newer tannin preparations were used in about 50 cases. There are four that may be relied on as of use in this condition, they are, calomel, castor oil, bismuth and opium. The two first were given in every case, and in 26 they were the only ones given. Calomel is preferred in cases where there is vomiting or a tendency thereto and when the case is not particularly urgent 1/20 to 1/10 of a grain at hour intervals. Castor oil is given in all septic cases with infrequent stools and without stomach involvement, in which a prompt washing out of the small intestine is desired. Bismuth was given in 432 cases and frequently large doses, not less than 10 grs. every one or two waking hours regardless of the age of the patient. To be of service it must produce black stools, that is, to be converted into sulphide in the intestine. If it passes through the bowel unchanged, sulphur should be supplied in the form of precipitate of sulphur, a 1-gr. powder given with each dose of bismuth. Opium is indicated if there is pain, tenesmus and frequent stools, and he has found it necessary to use it in 200 of his cases. Four or five passages a day are required to maintain drainage. But when the case is one of intestinal infection with infrequent foul stools or no stools at all, active laxatives are the only medication. Many children die because of the physician's idea that the diarrhea must be stopped. Kerley is not in favor of too frequent bowel irrigation as it may produce injury, straining, distension, etc. He usually employs a normal salt solution, luke warm, if there is high fever. Where there is blood in the stools he has used tannic acid, though he doubts its special value. The method he employs is the soft rubber catheter, No. 14, English, attached to a fountain syringe, the bag of which is held three or four feet above the child's body. When the catheter has been introduced about two inches the water is allowed to pass in slowly, filling the colon. This in a child eighteen months of age will require twenty-four to thirty ounces of water. When this or a lesser amount, at least one pint, has passed in, it is allowed to run in and out at the same time. The general management of the child is important; instruction should be given as to the care of bottle and nipple. He thinks that dispensaries do excellent work in instructing mothers how to care for their children. The municipalities should establish milk laboratories and ice stations for the poor, where these necessities may be obtained free or at a very small cost.

50. **Scarlatina.**—One of the graver dangers of scarlatina is in the invasion of the mucosa of the nasopharynx by bacilli causing scarlatinal sore throat, viz., streptococci. Seibert uses for this condition a prescription composed of tincture of iodin, 2 grams; potassium iodid, 1 gram; distilled water, 120 grams; carbolic acid, 10 drops. A teaspoonful of this mixture is administered every hour. An experience of twenty years has failed to show any carbolic intoxication with this mixture. Mild iodism and slight gastric pains may temporarily be produced. To clean and disinfect the infiltrated mucosa he employs irrigation with 1 to 5 per cent. warm solution of ichthyol repeated every six hours where the infiltration begins to obstruct the passageway between the nares. Where these are insufficient, more vigorous measures are required. During the past year he has treated six cases with local applications of 50 per cent. resorcin solution in alcohol, which he has also employed for the last eight years for the treatment of post-nasal catarrh in infants and children. He reports a case of scarlatinal nasopharyngitis treated with this prescription. He considers it imperative to attempt to destroy the pathogenic bacteria in scarlatina whenever they come within our reach and these resorcin-alcohol applications have proven themselves harmless and are indicated, he considers, whenever the nasopharynx becomes involved.

56.—See abstract in The Journal, xxxvi, p. 128.

58. **Smallpox.**—Towne thinks that modern sanitation has mitigated this disease, and it is not impossible but there may have been an acquired immunity through the vaccination of generations. The hesitancy with which the diagnosis has been made in this epidemic is due to various causes, inexperience with the disorder being one cause.

60.—See abstract in The Journal, xxxvi, p. 128.

62.—Ibid.

63. **Hemophilia Neonatorum.**—The nature of hemophilia has not been cleared up and Greef reviews the theories and findings in congenital cases. Three cases are reported, in two of which postmortems were made. He is inclined to believe that the condition rests upon abnormal permeability of the vascular walls. The large majority of children succumb and little can be done by treatment. He is inclined to think that many of the cases classed as melena neonatorum were fatal cases of hemophilia.

65. **Hemorrhagic Disease of New-Born.**—Brown reports two cases of hemorrhagic disease of the new-born, the clinical history of which corresponds more exactly with the classified description of Buhl's disease. The ictero-cyanotic skin, extreme wasting, marked gastro-intestinal hemorrhage, eczema, absence of continuous temperature and time of occurrence make points of agreement. The treatment in case 1 was with gelatin tubes containing about 1 dram, heated and diluted and fed to the child with very marked perceptible effect. In the second case gelatin was used in another form and the hemorrhage rapidly decreased.

68. **Streptothrical Infection.**—Musser reports two cases of streptothrical infection, one which, although postmortem observation was lacking, was interesting as determining the

possibility of recognizing the more or less obscure conditions met with in pulmonary streptothrical infection and the other as showing the doubtful symptoms and rapid course of localized cerebral infection by these organisms. He closes his paper with the following conclusions: "1. That the streptothrix in some varieties is pathogenic to man and gives rise to inflammatory, suppurative and necrotic lesions in the lungs and the skin, and by metastasis, probably in the brain and spinal cord and rarely, other organs (the kidneys). 2. That, while this pathogenicity is more than likely, and is primary, yet it must be remembered, it may be a secondary growth in the course of other infections. 3. That, in the pulmonary cases especially, death is due to a mixed infection. 4. That so-called sterile abscesses may be instances of streptothrical infections. 5. That afebrile processes may be due to this infection, or, conversely, this affection may be unattended by fever. 6. That the morphological relations to tubercle bacilli and allied organisms must be remembered. 7. That clinical observation and laboratory studies have yet to determine the clinical course of the streptothrical infections and their relationship to other streptothricæ on the one hand, and to tuberculosis on the other. They are not unlike other streptothrical infections, if these clinical facts are true, in that in actinomycosis, for instance, we find frequently a chronic afebrile course." He says these questions are as yet *sub judice* and require laboratory investigation and future clinical observation. As a suggestion of the nature of the infection, the question of leucocytosis should be looked into.

69.—This article has appeared elsewhere. See The Journal, xxxvi, paragraph 49, p. 1894.

73.—Ibid., paragraph 25, p. 1738.

77. **Commitment of the Insane.**—Fletcher criticises severely the old and new laws regarding the commitment of the insane in Indiana, maintaining that they are lacking in proper securities to those charged as being insane and in many respects take the form of secret inquisition. He does not believe that many non-insane persons are detained in public asylums. He thinks it impossible with the officers of these institutions, but it is perfectly possible under the Indiana law for persons to be picked up without chance for defense and committed as insane.

80. **Feather Beds and Colds.**—Hessler considers the use of feather-beds and the dusty condition developing after their long use, responsible for many of the irritations of the respiratory tract. The same objection applies to curtains, carpets and tapestry that collect dust and he particularly mentions the German fashion of using feather beds as objectionable.

86.—This article has appeared elsewhere. See The Journal, xxxvi, title 142, p. 1736.

87.—Ibid., July 27, paragraph 63, p. 287.

89. **Advancement.**—This term is defined by Valk as the bringing forward the insertion of the tendon of one of the straight muscles of the eye, from its normal position of attachment to the eye-ball to another in the same plane, but nearer to the cornea, but he includes also the shortening of the muscle plane at its insertion into the sclera. He discusses the different operations and describes the one which he has found most advantageous, which he credits to Savage, though he himself worked simultaneously in developing it. The operation as he performs it in latent, fixed or paretic squint, is described as follows: "After the eye has been properly prepared with a solution of boracic acid and a solution of cocain used or an anesthetic if necessary, the lids are separated by a speculum and the conjunctiva raised with the forceps over the lower or upper point of the insertion of the tendon. I then make a vertical incision followed by one horizontal, forming an L. This is dissected loose from the underlying tissue and then an opening is made in Tenon's capsule and the small hook is passed beneath the tendon, as the point of the hook comes out another hook is inserted in an opposite direction and the two hooks forcibly drawn apart, so exposing the tendon and part of the muscle. I now pass the small instrument, called twin strabismus hook, beneath the muscle and the hooks are allowed to separate by the action of the small spring in the joint and the two hooks are then removed. We now have the muscle and the tendon fully exposed and ready for the suture. Now, taking a piece of sterilized catgut from the capsule, we thread the needle and pass it first through the lower part of the tendon, then through the muscle, as far backward as we wish to make the 'tuck,' passing from within outward. It then goes across the belly of the muscle and is passed through, from without inward and back to the tendon where it passed from within outward, at a point corresponding to the first insertion. As the ends are tied over the tendon at this fixed point, we see readily the 'tuck' formed as the muscle belly is drawn forward and its long axis shortened. However, in case of fixed squint, I do a complete tenotomy of the opposing muscle before the suture is tied." The question when this operation is indicated seems to him the most important. He has no confidence in any method of examining that will "take the higher centers off their guard," or destroy the fusion force or guiding sensation of the eye and he uses the tests that destroy it simply as confirmatory. He asks, do not physiologic conditions show that Nature intended the eye should have power to move the eyeballs more in one direction than others, that the interni should be the most powerful—even independent of the power of convergence—and next, the externi, and in following order the inferior and the superior, the weakest of all. Should we not find, he asks, that the power of adduction is two to four times greater than that of abduction, and the power to turn the eyes downward somewhat greater than that of sursumduction, and, therefore, he fixes his standard as that in which the power of abduction is more or less one of fixed condition under which the eyes will diverge 6 or 8 prism degrees, so as to fuse or blend the retinal images, and then we can expect to find the power of abduction anywhere from 12 to 30 prism degrees without any muscular imbalance. Similarly we find the sursumduction one, two or three degrees in each eye and the opposing muscle will show deorsumduction of about one degree greater. With this condition of the muscular balance fully confirmed by several tests, he does not think we can have any muscular imbalance, without regard to what the other tests may develop when deprived of the fusion force. In defining noticeable modifications from that standard for his indications for operation, he points out the indications in various conditions, esophoria, exophoria, diplopia, convergent squint, etc. From his past experiences with the operation of advancement and shortening the indications depend upon one of degree, in reference to the change in position of the visual line; the power of the weak muscle, and that of imbalance of the muscle apparatus, as shown by the tropometer and tests of duction of prisms. He considers that advancement is fully required when we have a deviation of the visual line of more than thirty degrees of the arc. He concludes "That shortening is indicated in all cases of squint, if not too great, less than thirty degrees, combined with tenotomy, of the opposing muscle if necessary. That in all cases of imbalance—without any deviation of the visual line—the operation of shortening the weak muscle, thereby improving its power to turn the eye under the stimulation of the fusion force, is the best in my hands, as I have fully proved its application and usefulness. That the operation of shortening is also indicated in cases of paresis and the so-called paresis of divergence, in which we have a latent insufficiency of the muscular power, that frequently becomes manifest when they are about 40 years of age and presbyopia with hyperopia is present. That in all cases of heterophoria or latent squint, either lateral or vertical, the best results will always be obtained by the operation of shortening, without any fear of an over-correction, as long as the guiding sensation of the eye is free to act on the cerebral centers, as the process of healing takes place."

90. **Chalazion.**—Hale defines chalazion as tumor of the lid involving the Meibomian gland with obliteration of the glandular elements; limited by a surrounding membrane in which are found the perverted secretion of the earlier gland, glandular debris, micro-organisms and sometimes pus. He

thinks that the general health has much to do with its formation, some disorders producing a thickened secretion, and that the constant rubbing of the exposed lid, aided perhaps by germ infection, starts the inflammation which leads to chalazion. The only thorough treatment of this condition is excision in some cases, followed by the curette. Operation through the conjunctiva is more often called for in chalazion of the lower lid where the tarsus is thinner and the conjunctiva less intimately attached. In the upper lid the usual choice is excision through the skin of the lid.

100. **Smallpox.**—The epidemic of smallpox, the diagnosis of which is questioned by some in Clarksville, Tenn., is reported by Runyon, who calls attention particularly to the failure of glycerinated vaccin lymph in these cases. He does not know where the fault lies in the substance used. It may possibly have been in the original stock, or possibly from some other cause, but he would not risk the protective power of any glycerinated virus until he had followed it up with a point to make sure the subject had been rendered thoroughly immune to vaccination.

108.—See abstract in The Journal of July 13, p. 138.

109.—Ibid., p. 137.

111. **Pyemia.**—The cases of septic pyemia occurring early this year in Colorado and reported by Hall suggest bubonic plague in some of their symptoms and are of interest on that account. He has collected together 14 cases, 2 of which occurred in Chinamen and in connection with the existence of plague in California at the time caused some uneasiness. The occurrence of so many isolated cases of septico-pyemia within a few weeks in adults of previous good health was certainly unusual. His own opinion as to their existence is that many originated, as some certainly did, from a streptococcic sore throat, possibly not severe enough to attract much attention. He refers also to 2 cases of pneumonia accompanied with sepsis, which were fatal. The majority of the patients with abscess recovered; in many there was no bacterial examination made. In a few where they were made, a pure streptococcus infection was found.

116. **Nose and Throat in Chest Diseases.**—The object of Scheppegrell's paper is to emphasize the fact that the abnormalities of nasal respiration is due to partial or total destruction, atrophy, or other disease of the nasal cavities, may develop irritation of the lower respiratory organs. Therefore, in treating diseases of the chest, the possibility of irritation due to disturbance of the upper respiratory passages should not be overlooked, and no case of bronchitis or asthma should be considered incurable unless the nose and throat have been examined and abnormal conditions corrected, if possible. Often this examination, if made at all, is delayed until secondary changes have taken place, making cure no longer possible, but still some relief may be hoped for under proper management.

118. **Chloroform and Nitrite of Amyl.**—McIlhenny, on Senn's suggestion, started the use of nitrite of amyl, 1 dram, to a pound of chloroform in anesthesia, and the result was excellent. Nitrite of amyl acts as a decided check-rein to the chloroform, especially as to its effect on the circulation and respiration. It seems to modify the ill effects without interfering with its anesthetic properties. The stage of stimulation is much modified, the face does not become flushed, breathing is not labored or rapid, the stage of depression is often absent, the heart beats regular and strong. The pupils will be very misleading to a person giving nitrite of amyl with chloroform for the first time, for it requires very close attention to notice their response to light. Vomiting is very rare. The patient usually recovers consciousness very rapidly and there is no headache or fulness of the head as might be expected. The urinary secretion is increased, but contains no sugar or albumin. The body temperature is somewhat lower. From his experience he would greatly prefer this combination to chloroform alone.

129. **Uncinariosis.**—This term, which is applied by Stiles to the condition called anklostomiasis, is described as it occurs in man. A case is reported, showing that it exists in Virginia and he also had cases sent to him for confirmatory diagnosis from Ohio and the Rocky Mountain region, in which the condition was simulated by plant fibers. There is only one way in which it can be positively diagnosed, viz., by examination of the feces, but in this way its recognition is easy, and no special technique is necessary. The use of a moderately high power microscope will show eggs, though we must be careful not to mistake the eggs of ascaris for those of uncinaria, or those of oxyuris. The ascaris eggs have a thick gelatinous, often mammillated, covering and those of oxyuris have a thick asymmetrical shell, one side being almost straight. The whip-worm type, trichocephalus, possesses a smooth thick shell apparently perforated at each pole, and unsegmented protoplasm. The eggs of uncinaria are elongated ovals with thin shell and protoplasm either unsegmented or in the early stages of segmentation. Gross examination of the feces where the microscope is impracticable can be made by washing the stools thoroughly in a bucket and examining the sediment for worms about an inch long, about as thick as a hairpin or hatpin, with one end curved back to form a hook. The most commonly used drugs for treatment are thymol and male fern. The stools should be disinfected with quicklime. He describes the life history of the parasite, its zoological characteristics, the means in which it injures by biting the intestinal walls and also gives the different species found in different animals, the uncinaria duodenalis being the human parasite.

135.—This article appeared in The Journal, xxxvi, p. 1599.

136.—Ibid., p. 1606.

137.—Ibid., p. 1611.

FOREIGN.

British Medical Journal, August 10.

Plague and Its Prevention as a Disease Communicable from Animal to Man. David Samuel Davies.—The published articles on plague were barren of interest to the epidemiologist, according to Davies, until Cantlie suggested that the endemicity of the disorder in certain ports of Central Asia, as it coincided with the distribution of a particular subfamily of rats, was possibly in causal relation with a definite rat habitat. Evidence rapidly accumulated, ultimately culminating in our present knowledge that plague is primarily an epizootic disease communicable to man rather than an epidemic disease communicable to animals. The records of the Sydney outbreak of plague may be taken as a typical manifestation of the introduction of plague epizootic amongst a wholly civilized white population. The following facts stand forth: "1. The disease did not spread by person-to-person infection. 2. The observed facts as to its spread can only be satisfactorily explained by assuming an animated host, not human, to diffuse the infection in place, and a second host to communicate the infection to man; the two hosts are the rat and the flea. 3. 'Contact' in regard to plague infection does not necessarily mean one who has lately been associated with a plague patient; it means rather one who has been exposed in more or less close association with plague rats within five days. 4. Nearly all the cases were bubonic in type, a type very little infectious. 5. The outbreak originated in connection with a wharf, almost certainly through the handling of plague rats from infected ports; and the history of further infection in the town pointed definitely to the same means of distribution." Davies remarks that the importance of rats need hardly be questioned or dilated upon in the spread of plague. He asks, are our present regulations sufficient to prevent the introduction of plague, or, in other words, are the means accurately adapted to its etiology? It is a great blunder to treat pestilence uniformly. The present local government regulations in England against cholera, yellow fever and plague are practically transcripts of the former regulations against cholera, to the circumstances of which purely human disease they are excellently adapted. Up to the spring of 1901 no further official instructions regarding plague were issued. He calls attention to the fact that the port of Bristol found itself in a peculiar position in the beginning of the present year. A grain vessel arrived from an infected port with no history of illness, and, therefore, not infected under the regulations or liable to any detention or supervision. For some months special precautions as to offmooring of vessels from the quayside, disc-guarding of ropes, up-lifting of gangways, and day and night watchmen had been enforced as stringently as the absence of special powers would permit, and careful watch was kept. Thirteen dead rats were found in the forehold and plague as the cause of death certified, but not until the cargo had been partly discharged and distributed. The ship was dealt with as an infected ship and 226 rats were destroyed. He says to bring infected rats to a port in unlimited numbers and then rely on attempts to prevent them coming ashore is obviously taking the evil at the wrong end. It is impossible to destroy all rats on a loaded ship, while it is not difficult to practically do this in an empty one. The best policy, therefore, is to secure rat-free merchant ships, and the author asks: Is this practicable? Dr. Ashburton Thompson suggests that if vessels which engage in coasting voyages, lasting three weeks to a month, are fumigated at the point of departure before loading and at the ultimate ports touched on the voyage, few if any rats are discovered to remain, and this statement applies to steam vessels of various tonnages up to 4000. This method has been carried out, he says, under intercolonial agreement requiring a vessel to produce a certificate of fumigation, without which they are subject to detention. The method, therefore, is practicable. Davies says it is high time our knowledge of the etiology of plague be utilized in international as well as in other traffic and the rats must be destroyed before loading the ship.

The Lancet, August 10.

Mortality from Phthisis and Tuberculous Diseases Considered in Some Aspects Which May Be Demonstrated by Means of Life Tables. T. E. HAYWARD.—The author publishes and discusses tables showing the total expectancy of life under various aspects, and the difference produced by excluding phthisis as a cause of mortality. He also gives tables showing the total life capital of England and Wales for the middle of the year 1891, and to what extent this life capital would have been increased by, 1, eliminating phthisis, and 2, by doing away with all other tuberculous disease as a cause of mortality. He finds that the average period of working life would be lengthened on the average by very nearly two years. The years of human life are now capable of being translated into terms of money; it is evident that the ravages of phthisis may entail a very serious financial loss to the community. He admits that this work is not that of a physician, but he leaves it to the actuaries to measure this and suggests to those concerned in the management of industrial and other life assurance societies that it might be an act of profit to them to subscribe something toward the establishment and management of sanatoriums for the treatment of phthisis.

On the Physiologic Cure of the Morphia Habit. W. OSCAR JENNINGS.—The author claims that before the publication of his little work in 1890 there existed no treatment of the morphin craving founded on therapeutic indications. His first observations were made in his own case and he has had opportunity of verifying these during the last ten years. He remarks that there are many persons who lack the will power to carry out the treatment alone. There are others who want to get well and have no real craving that prevents them, but are suffering from hysteric neuro-mimetic craving. In these cases great tact is necessary. Such patients should never know how much morphin they are taking or what other agents are being administered. The symptoms, though really distressing, are entirely ideal. If a patient is seriously desirous of giving up, he should commence by renouncing all liberty of action during the treatment, give up his syringe and his solution and be guarded against all temptation. When the morphin is associated with some other addiction, the first thing is to suppress the other stimulant, whatever it may be. This is not difficult if it be alcohol or cocain. The quantity of morphin taken becomes more satisfactory instead of being antidoted, as it were, by the other stimulant when they were taken together. Jennings believes in the gradual reduction as slowly as is necessary to effect a cure without distress. It is desirable first to bring about a change as soon as possible in the mode of administration of the drug. If this can be effected early, so much the better; but there should be a gradual substitution of the rectal for the hypodermic injection the moment the patient is reduced to 2 grains by the skin. Two grains would seem to be the vital requirement; above 2 grains morphin can be found in the urine; below this it seems to be assimilated. From this point onward twice as much should be given by the rectum as by the skin. The great point is to get rid of the syringe, to wean the patient from his accustomed stimulant. Moreover, an injection by the rectum is not agreeable and has not the fascination that leads to the constant use of the syringe. The patient is satisfied with what is really required to prevent discomfort. In giving morphin it should be remembered that this is not a sedative but a stimulant, the withdrawal of which causes a suppression of vital force and gives rise to general functional disturbance greater than would result from the privation of other stimulants. The utility of heart tonics is evident. The next great factor of craving is hyperacidity of the stomach and organs generally. This suggests the administration of bicarbonate of soda, a method to which he has been calling attention for thirteen years and the importance of which is now recognized by every writer. Bicarbonate relieves craving so far as it is caused by over-acidity in the same way that heart tonics relieve it when caused by cardiac sluggishness and nothing more. Other means of relief may be supplied as indicated, but the third of his therapeutic triad is the hot-air bath. The effect of the bath is largely due to its tonic and sedative action, but it may also act as an eliminator of some excitant of craving. This may possibly be the oxi-di-morphin which is formed in the body and is considered by Marmé as its chief cause. He insists on the non-alcoholic régime. There must be no reading in bed during the progressive reduction. For insomnia, cerebral galvanization is sometimes magical, but if unsuccessful the best hypnotic is trional. The fluid extract of coca and kola are frequently of use and the only other drug taken constantly by his patients is valerianate of ammonia. He warns against the synthetic derivatives of morphia, such as dionin and heroin, which can get up a worse condition than morphin itself. The latter is only second to cocain as a drug to be avoided. It has been said that ex-morphin habitués are subject to periodical periods of craving, and these are more likely to occur in those who have undergone the slow reduction. These are errors. One of the best proofs of the progressive plan is that when properly carried out the patients gain in weight. One of the consequences of this, however, is a tendency to hyperchlorhydria and excessive uric acid, both of which are factors of craving. Besides this the ex-habitué is generally polydipsic and boulimic and does not restrain his appetite, drinks of alcoholics and eats in proportion. As he is easily tired, he has a disinclination to be active. He is nearly always saturated with uric acid and on the verge of bilious or gastric failure. This is the cause of what is called after-cravings. We must always remember that every morbid sensation during the past addiction having been treated with morphin, every malaise in the future will suggest it. The best proof that these are not real cravings is the result of treatment, for after being properly treated the cravings will disappear. When the ex-habitué is careful to lead an abstemious life he is not liable to such cravings. Everything should be done to keep up a healthy tone of the system, taking exercise as much as possible without fatigue; the regular use of Turkish baths is also specified. The remainder of his paper consists in an account of cases illustrating the different phases and forms of the condition and the results of special treatment.

Electrolytic Transmission of Sulphur Through Pig's Skin, and Its Therapeutic Value in Eczema, Gout, etc. FRANCIS WILLIAM SMITH.—Smith has experimented on pig's skin and found that sulphur can be driven through this substance from Harrogate sulphur water by electricity. The therapeutic value of this treatment is in its connection or use of the electric current with the baths. The fact that many cases of long-standing eczema have been benefited under the method would justify this treatment.

Bulletin de l'Academie de Med. (Paris), July 23.

Preparalytic Hemichorea. Boinet.—Bechtereff has recently published the case-report of a man of 68, suddenly seized with left hemichorea, subsequent to a violent emotion. He died fifteen days later with symptoms of paralysis of the heart. The autopsy disclosed a circumscribed hemorrhagic focus in the posterior portion of the optic layer. Boinet describes a case in which a sudden hemichorea appeared, followed by atrophy of the muscles of the left arm and leg, with corresponding facial asymmetry. In a second case, hemiathetosis and hemichorea coincided with the atrophy of the muscles, deviation of the tongue and facial asymmetry on the side affected. He has also witnessed a case of rhythmic hemichorea in a patient with general paralysis. He attributes this preparalytic or postparalytic hemi-athetosis or hemichorea to an interruption of the conductors connecting the central ganglia with the cerebellum—the route traversed including the superior peduncle of the cerebellum, the red nucleus, the optic layer, the internal capsule and the anterior portion of the lenticular nucleus.

Tuberculous Rheumatism. A. Poncet.—Three cases are described which presented the clinical picture of acute articular rheumatism. Bacteriologic investigation disclosed the tubercle bacillus, and inoculations of guinea-pigs confirmed the tuberculous nature of the arthritis. Poncet proposes the term "pseudo-rheumatism of bacillary origin" for the affection.

July 30.

Treatment of Chorea by Immobilization. Huyghe.—The method of treatment described is a sort of auto-suggestion, and has proved invariably successful in an extensive experience. The patient is given a little chloroform—not enough to anesthetize—the limbs are massaged vigorously and placed in splints, immobilizing them for five or six days. If the slightest choreic movements are noted after this interval, the treatment is recommenced. The patient is all the time under the influence of auto-suggestion. He no longer sees his limbs, and forgets to move them. The treatment is entirely harmless and can be applied to all varieties of cases and in all kinds of surroundings.

Latent Cardiopathy and Sudden Death. Kelsch.—Cases may occur anywhere, but they are best studied in the army in which all the factors, both of cause and aggravation, are magnified. Kelsch has collected thirty cases of these non-rheumatic cardiopathies, developing without symptoms, and revealed only at death, which is precipitated by some extra exertion or excitement. The original cause is some poisonous influence—in which alcohol takes the lead—or the results of infection—diphtheria, typhoid fever, la grippe or an eruptive disease—or the rudimentary lesion may be the result of intoxication from infectious products. Overexertion or excesses of any kind, start these latent rudimentary lesions into an evolution which progresses insidiously to the fatal termination.

Centralblatt f. Chirurgie (Leipsic), July 27.

Hints for Cystoscopy. S. Goldberg.—Olive oil is better than glycerin to lubricate the tip and angle of the cystoscope. Neither cocain nor chloroform are so effective for anesthetizing the bladder in certain cases as 50 c.c. of a 5 per cent. solution of antipyrin, left for ten to twenty minutes, and then washed out before the introduction of the cystoscope.

Extirpation of the Appendix Between Attacks. M. Jaffe.—In certain cases of appendicitis, the process may develop without much disturbance, but may leave adhesions, infiltrations and cicatricial formations from perforation of the appendix into the cecum, or a similar lesion. Instead of the vain search after the appendix in such cases, Jaffe recommends resection of the portion of the intestine involved, and in case of stenosis, enteroanastomosis.

Deutsche Med. Wochenschrift (Berlin and Leipsic), July 25.

Therapeutic Application of External Palpation of the Rectum. W. Ebstein.—Palpation of the rectum through the gluteal groove almost invariably reveals that it is filled with accumulated fecal matters. By massaging from above downward it is possible to expel these contents, and the massage strengthens the muscular action of the rectal walls. The massage can be done by the individual himself, and will be found a useful therapeutic measure in case of stagnation and torpid muscles.

Multiple Hemorrhages of Face and Conjunctivae. Hoppe.—A sudden pressure on the thorax has been known to induce multiple hemorrhages in the face and conjunctivæ. The phenomenon was consecutive to trauma in the nine cases on record, but Hoppe observed a case in which it followed violent retching. The patient, a man of 35, had eaten mushrooms and fearing that they were poisonous, tried to vomit them by tickling his throat and retching. All the cases were distinguished by the swollen cyanotic aspect of the face, and the numerous hemorrhages, mostly petechial, with transient disturbance of sight.

August 1 and 8.

Acromegalia. A. Fraenkel.—Four cases of acromegalia are described with the postmortem findings. Nothing was found peculiar to the disease in any organ, except a tumor in the hypophysis in each case. The tissue of the tumor showed alveoles with granulated cells and free vascular ramifications, evidently derived from the epithelial elements of the anterior lobe. In one case, the cells were almost exclusively free from granulations, with many polynuclear and round cells. The posterior lobe of the hypophysis was intact in all four cases. The hereditary character of acromegalia was evident in one case. One was not the complete type of acromegalia, but seemed rather a transition between this and gigantism.

Disturbances in Heart Action Not Due to Organic Troubles. T. Rumpf.—Several cases have come under Rumpf's observation, of disturbances in heart action noticed after considerable loss in weight from a course of treatment for obesity. He gives illustrations of the most severe case of this kind, showing that the apex changed its position by 13 cm., according as the young man lay on the right or left side or stood erect. The loss of the fat in the abdominal cavity after the weight had dropped from 238 to 153 pounds, evidently caused the previously stretched diaphragm to sag, and this allowed the displacement of the heart. The symptoms indicated cardiac insufficiency, but Rumpf advised the patient to cultivate his former obesity, which he did, with the complete disappearance of the heart disturbances, as confirmed by an examination thirteen years later. Rumpf has also observed two cases, simulating cardiac insufficiency in the symptoms after a hearty meal, or after eating certain foods, but vanishing as the stomach became empty. The troubles are due in such cases to the mechanical interference with the heart's action by the diaphragm distended by gases in the stomach. The cases described were observed for twelve years and no signs of cardiac insufficiency beyond the functional disturbances have developed. The heart disturbances may be of a reflex nature. The pulse may be accelerated, irregular or interrupted, or may show a second systole with no complete diastole. He calls attention to the variations in the heart action after eating and warm baths, observing that this physiologic variation is sometimes accepted as the result of treatment at a health-resort.

Muenchener Med. Wochenschrift, August 6.

Further Research on the Globulites. H. Buchner.—The results of further study of the globulites described in The Journal of August 17, p. 480, show that they are composed of barium sulphate. The barium is evidently derived from the peptone, while the sulphate is a product of the leucocytes themselves. The tests also demonstrated that any albumin or albuminoid substance from one species of animal attracts the leucocytes in another species with a specific

"Lockreiz," that is, acts as a stimulus to their local accumulation.

Injuries of the Vessels of the Root of the Mesentery. Wilms.—On the basis of two clinical cases and experimental tests, Wilms asserts that the superior mesenteric vein can be ligated below the pancreas without resulting gangrene of the intestine. It is dangerous to ligate it above the pancreas, where it merges into the portal vein.

Duplicity of Protopathic, Malignant Tumors. R. L. Gruenfeld.—Eight cases of the simultaneous occurrence of two varieties of malignant neoplasms are reviewed and a case personally observed is described. In Becker's case a melanosarcoma of the cheek and cancroid of the eye and ear appeared after extirpation of a rodent ulcer on the nose. In Niebergall's case a carcinoma, a fibro-sarcoma, a myoma and some polypi were found in one uterus. In Kretz's, an endothelioma of the dura mater coincided with a carcinoma of the esophagus. Other cases were those of a lipomyo-sarcoma in each kidney, associated with a psammoma in the brain and a carcinoma in the stomach; a carcinoma in the pancreas with multiple angio-sarcomata in the liver, and a case of roundcelled sarcoma and diffuse adeno-carcinomatous proliferation in the same uterus. There are nearly a dozen cases on record of double carcinomata or other malignant tumor, including Albert's case in which both breasts were the seat of primary carcinomata; Carriere's with symmetrical epithelioma in each kidney, and Bucher's with a primary carcinoma in the right breast, six years after the extirpation of a similar tumor in the left. In the new case reported by Gruenfeld, a diffuse, infiltrating carcinoma of the rectum coexisted with an endothelioma originating in the posterior lobe of the hypophysis cerebri or in the adjacent dura mater—it was impossible to determine which. No clinical symptoms had been observed during life suggesting acromegalia or other probable consequences of a tumor in the hypophysis. Heusser has described a somewhat similar case in which a carcinoma of the rectum coincided with an undiagnosed lymphosarcoma in the hypophysis. Köhler found 8 sarcomata among 37 cases of tumor of the hypophysis, but none resembling an endothelioma.

Treatment of Motor Aphasia. Vidal.—There are few fields more promising than the treatment of motor aphasia, especially when the memory is retained. The chief point in treatment is exercising the patient in the pronunciation of the words or syllables in which he is defective. It is important to study first, the sounds which he finds most difficult to pronounce. In one case it is the vowels, in another the labials, and so on. He must be trained to watch the lips of the speaker, and to watch his own lips with a hand glass. Gutzmann recommends teaching the patients to write with the left hand, as a means of educating a new, right speech center. Vidal, however, considers this too much of an effort for a patient past youth. The chief difficulty he has encountered in curing motor aphasia, is that occasionally mental effort causes headache, on account of the preceding apoplexy.

Wiener Klin. Wochenschrift, August 1.

Elimination of Chloroform from the Respiratory Organs. K. Buedinger.—In the tests reported in this communication, the elimination of chloroform continued for several days after the anesthesia. The chloroform clings to the sputa for days, and consequently its irritating effect is not restricted to the time of the narcosis, but persists long after. In persons with much mucous secretions, the chloroform is eliminated less rapidly, as it evidently combines with the phlegm and this may be a factor in the nausea and vomiting. It is evident that the removal of all accessible mucous secretions is indicated in all cases of protracted chloroform narcosis.

New Points in Skiagraphy. G. Kaiser.—The rays are collected in a lead funnel which thus concentrates their action on the spot desired. Kaiser also states that he uses tubes made of red or blue glass, and finds that no symptoms of irritation have followed, no matter how long the exposure or how intense the light, since he began using these colored tubes.

Klinitchesky Journal (Moscow), May.

Clinical Significance of Myoidema in Cerebral Affections. Hannouchkine.—In 84.8 per cent. of 355 cases of various cerebral affections examined at Moscow, myoidema was noted, pronounced in 73.8 per cent. and slight in 11. It is not pathognomonic of any special disease, as it was encountered in 57 to 100 per cent. of the 22 different kinds of cerebral affections investigated—constantly in the 11 cases of epilepsy and 11 of delirium tremens.

June.

Anatomy of Atrophy of the Intestines. P. Kusskow.—Examination of the intestines in infant cadavers, rabbits and kittens, has convinced Kusskow that others have been mistaken in their descriptions of some of the alterations noted in atrophy of the intestines in nurslings. The anatomic picture that Nothnagel and others have described is, in reality, merely the effect of putrefactive processes, chiefly due to distension of the intestines. No reliability can be placed on signs of atrophy except in undistended portions of fresh intestines. In the distended portions, the alterations can be attributed to atrophy only in the absence of destructive processes from distension and in case the lesser number of glands and orifices of the follicles fails to correspond with the extra thinness of the tense mucous membrane.

Vratch (St. Petersburg), June 1 and 8.

Early Diagnosis of Tubercular Peritonitis in Children. A. A. Kissel.—A large number of cases are described in detail out of Kissel's personal experience of fifty-four little patients with tubercular peritonitis. He states that it occurs far more frequently than is generally recognized. In fact, he asserts that almost all the cases of so-called spontaneous abdominal dropsy are in reality nothing but tubercular peritonitis. It may commence with a stormy onset, but in the vast majority of cases it develops insidiously and the family notice merely that the child is growing thin and pale. Under general tonic treatment the effusion may be absorbed and the child restored to perfect health. The diagnosis is aided by the discovery of simultaneous pleuritis with effusion. The most important sign is the thickening of the layers of the peritoneum observed when a fold is pinched up between the fingers—never found in a non-tubercular affection. Even in the absence of any objective manifestations and in apparent health, a thick growth of more or less recent tubercular masses may be palpated in this way on the surface of the peritoneum. The ascitic fluid is very rich in albumin and has a high specific gravity. The diagnosis is most difficult in the rare cases in which a chronic ascites coincides with a tubercular pericarditis.

June 15.

Tuberculosis of the Lymphatic Glands. B. K. Finkelstein.—Ten years' study of this subject with 456 patients, has convinced Finkelstein that tuberculosis of the lymphatic glands is the preliminary to very serious affections. The appearance of small tumors in the glands is an indication of an approaching serious affection. General treatment is sufficient to cure tuberculosis of the glands in the first stage, but in all other stages, operative treatment alone affords favorable results. Injections of arsenic, tuberculin, zinc chlorid and silver nitrate merely hasten the destruction of the gland. The most effective local measure is the application of heat. General treatment and good sanitary surroundings are indispensable to prevent recurrences. In his experience, 7 patients were under 10; 329 or 72.1 per cent. between 10 and 20; 97 under 30; 18 under 40; 3 between 40 and 50, and 2 between 50 and 60. Out of the 201 operated on he has been able to trace only 9 for one to five years after the operation, who have nothing left of the lesion but a linear scar. Recurrence has been known to occur in 43, but the majority of the operated patients have been lost sight of. The wretched hygienic environment of most of the patients has undoubtedly nullified the surgeon's efforts in many more cases than these.

Application of Psychotherapy to Children. R. A. Peters.—This communication describes a number of cures of hysteric affections, incontinence of urine and other neuroses in children between 8 and 15, by suggestion in hypnosis. Peters calls attention to the difference between hypnosis in children and in adults, considering the former essentially different from the latter. In only three out of forty children thus treated was he able to induce the hypnotic sleep as in adults, without verbal suggestion, leading to catalepsy, lethargy and somnambulism. These three were girls of 12 to 14 with chronic hysteria. In all the others, the hypnotizing measures had to be accompanied by verbal suggestion for each stage of the process. The sleep induced was light; somnambulism could be induced, but never catalepsy or lethargy. The awakening is different also. The usual measures, blowing in the face, etc., only caused the children to shut their eyes more tightly and never aroused them, unless accompanied by the verbal command to wake up. This pseudo-hypnotic sleep can be induced in healthy children as readily as in the nervously predisposed, and it is never accompanied by any unpleasant sensations.

June 29.

Streptococcus in Articular Rheumatism. V. E. Predtetchensky.—Pure cultures of the streptococcus were derived by this writer from the blood in two out of five cases of typical acute articular rheumatism. The cultures inoculated into animals reproduced a joint affection resembling in every respect the affection in man whence they were derived.

July 6 and 13.

Histologic Changes in the Puerperal Uterus in Streptococcus Infection. I. J. Klitine.—A long series of experimental researches are reported with the histology of the uteri of gravid rabbits inoculated with cultures of the streptococcus in various ways, sometimes in the mucosa of the vagina, sometimes in the cornu of the uterus or directly into the blood. Marked histologic alterations were observed in every case in the rabbits submitted to this acute streptococcus infection, alike in all cases. The administration of antistreptococcus serum, however, attenuated or entirely prevented these histologic changes. The serum evidently affects the cellular elements in such a way as to diminish the toxic action of the streptococcus. All the animals inoculated at the time the litter was cast, and then treated with the serum, invariably survived the control animals.

Differentiation of Diphtheria Bacilli. I. A. Shabad.—The combined association of pseudo-diphtheria bacilli and of virulent and non-virulent bacilli in varying proportions, has been a fruitful source of error in their differentiation. The specific reaction of these different kinds of bacilli, however, to Neisser's stain is a constant and reliable means of differentiating them in bouillon cultures.

Etiology and Serum Treatment of Malignant Neoplasms. G. M. Vlaeff.—Blastomycetes derived from carcinomata in man have induced neoplasms with the characteristics of malignancy in animals, and Vlaeff has succeeded in producing an antiserum by repeated inoculation of these micro-organisms in geese and she asses. The Journal has already mentioned some of his experiences. He is convinced that all malignant neoplasms are essentially of the same nature, and that the variety observed is due to the special reaction of the tissues of the individual, the site of the tumor, the age, etc. He has seen instances of the simultaneous occurrence of sarcoma and carcinoma in the same patient. He states that with the antiserum derived by repeated inoculations of blastomycetes—saccharomyces hominis—during the course of a year, it is possible to cure a malignant neoplasm in an animal if—and this is the important condition—the neoplasm is still localized, with no metastases. At a later stage, the life of the animal is prolonged, an inoperable tumor rendered operable in many cases, but the affection continues a retarded course unless the neoplasm is extirpated in time. These experiences have been confirmed in every respect in the clinics. He has now an experience of sixty patients thus treated, and describes several cases in detail. Those with a strictly localized tumor, without mestatases in the glands or elsewhere, were improved to such an extent that they can be called cured, all regaining their former weight.

In one case after the tumor had been growing for seven months, the patient was treated with 13 injections of 10 c.c. of the serum in the course of nearly six months. She gained 8 pounds in weight and the tumor retrogressed to such an extent that the surgeons were skeptical in regard to its malignant nature. The remains of the tumor were therefore excised and examined by four Paris clinicians besides Vlaeff, including Brault and Cornil, and all confirmed the assertion that it was a typical, cylindrical-celled carcinoma. The patient has been in perfect health since, now more than a year. She is now 45 years old. In several cases of inoperable recurring malignant growths in the large intestine, the general health was remarkably improved and patients restored to comparative health. He concludes his communication by reiterating that in animals it is possible to completely cure if treatment is commenced before the formation of metastases, and his clinical experiences indicate that the same is true of man.

July 20.

Six Cases of Rupture of the Uterus. V. N. Orloff.—The pelvis was somewhat smaller than usual in each of the 2 cases of incomplete, and 4 of complete rupture of the uterus described in this communication. Two of the latter group died. The fetus was of normal size and weight in each case. Labor had lasted from twenty-nine to forty hours, except in one case in which delivery occurred in eighteen hours. The patients were all multiparæ. In 820 cases Orloff has collected from the literature, the mortality ranged between 55 and 75 per cent. The results vary in proportion to the condition of the patient and the extent of infection, rather than according to the method of treatment selected. Klein's statistics show good results from tamponing, drainage or mere irrigation. In 77 cases of complete rupture of the uterus, 75 per cent. of 28 patients recovered after drainage; 44 per cent. of 46 patients recovered after tamponing, and 50 per cent. of 10 patients with irrigation. In 35 cases of incomplete rupture 100 per cent. of 9 patients recovered after drainage; 50 per cent. of 20 patients after tamponing, and 50 per cent. of 6 patients after simple irrigation. Tamponing is indicated when the hemorrhage persists after delivery; and drainage when a purulent discharge appears several days afterward, especially in case of incomplete rupture. In the absence of hemorrhage and discharge, irrigation is indicated. In Orloff's cases of complete rupture of the uterus, laparotomy was done in 3, but the uterus was not removed in any case. The rent in the two incomplete ruptures extended from the wall of the cervix, commencing at the vaginal portion, to the point of attachment of the broad ligament, where the placenta was adherent. Both these patients recovered with merely vaginal irrigation. In the first case of complete rupture, the rent extended through the left wall of the uterus, and the fetus and placenta had escaped into the abdominal cavity. The uterus was tamponed with iodoform gauze, and laparotomy postponed on account of the weakness of pulse, etc., and the absence of hemorrhage. Symptoms of peritonitis developed, which proved fatal in five days. The rent in the second case extended through the left wall of the uterus and into the left broad ligament, following a tortuous course. The fetus was found in the abdominal cavity. The rupture was sutured through a laparotomy and patient recovered. In the third, the rent started in the anterior wall of the cervix and included the peritoneum, right broad ligament and vesico-uterine pouch, but the fetus had remained in the uterus. The laceration in the cervix was sutured through the vagina, and the broad ligaments, etc., through a laparotomy incision. The patient died eight days later from peritonitis. In the fourth case the cervix was but slightly lacerated, and the rupture chiefly involved the anterior cul-de-sac, the peritoneum of the vesico-uterine pouch and both broad ligaments throughout their entire extent. The fetus had not escaped from the uterus. The cervix was not sutured, but the broad ligaments, etc., were sutured through a laparotomy incision and patient recovered.

Queries and Minor Notes.

MEDICAL PRACTICE ACT.

LAKESIDE PARK, STATELINE P. O., CAL., Aug. 17.

To the Editor:—Will you please state the requirements for the practice of medicine in Montana? M. B.

ANS.—The requirements of Montana are the passage of a satisfactory examination and that the applicant should present evidence of having attended four courses of lectures of at least six months each, if he has graduated subsequent to 1898. Application for circulars, etc., should be made to the secretary, W. C. Riddell, M.D., Helena, Mont.

DR. GOETSCH ON TUBERCULIN.

MANSFIELD, OHIO, Aug. 17, 1901.

To the Editor:—The July 6 issue of THE JOURNAL gives a notice of Dr. Goetsch's paper on tuberculin; it is very important. Can you not give the paper in full? I assure you tuberculin in conjunction with outdoor life is the most promising treatment at our command for tuberculosis. If you can not publish it in full, will you inform me if it has been published in English, and where I can procure it? A. J. E.

ANS.—We do not know of any English translation of the paper mentioned.

NAMES OF SECRETARIES WANTED.

CANTON, N. Y., Aug. 24, 1901.

To the Editor:—Will you kindly give me the address of the secretaries of the state medical examining boards of Michigan and Wisconsin? W. H. G.

ANS.—B. D. Harison, M.D., Sault Ste. Marie, Mich., and H. M. Ludwig, M.D., Richland Center, Wis.

CELLOIDIN THREAD.

NASHUA, N. Y., Aug. 24, 1901.

To the Editor:—In reading the last number of THE JOURNAL my attention was attracted by the experience of Dr. A. Hammesfahn in simplifying suture process by using celloidin thread. In looking up the literature, I find no data on that kind of suture. Please tell me where I could procure some of that material, and oblige. A. G.

ANS.—We do not know where this can be obtained in this country, but Pagenstecher's celluloid thread is probably the same thing; its advantages are reported on by Drs. Keen and Rosenberger, whose article was published in the *Philadelphia Medical Journal*, of March 10, 1900, and abstracted in THE JOURNAL, March 24, 1900, p. 741.

New Patents.

680,122. Apparatus for vaporizing medicinal agents. Erasmus T. Camp, Gadsden, Ala.

679,890. Apparatus for measuring errors of refraction. Louis L. Ferguson, New York City.

679,980. Bandaging table. Benjamin G. Miller, Cumberland, Md.

679,993. Adjustable adhesive supporting plaster or bandage. John G. Ross and H. M. Taggart, Philadelphia.

679,784. Exercising machine. Michael B. Ryan, London, Eng.

680,179. Toilet-disinfecting apparatus. Leon C. Schoneman, New York City.

679,918. Shield for wounds. Edward C. Shears, Lakota, N. D.

679,802. Operating table. Thomas M. Vaughan, Mattoon, Ill.

679,925. Artificial ear-drum. Laura H. Vickers, West Philadelphia, Pa.

680,384. Fumigating and disinfecting. Charles T. Kingzett, Chiselhurst, Eng.

680,436. Shoulder-blade extractor. Elmer P. Nichols, Stamford, Conn.

680,556. Exerciser. Henry W. Wieland, London, Eng.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Aug. 8 to 14, 1901, inclusive:

Dallas Bache, colonel, assistant surgeon-general, sick leave extended.

James L. Bevans, contract surgeon, now at San Francisco, Cal., is relieved from further duty in the Department of Alaska, and assigned to duty in the Department of California.

William C. Borden, major and surgeon, U. S. A., leave of absence extended.

Henry F. Hoyt, major and surgeon, U. S. Vols., leave of absence extended.

John S. Kulp, captain and asst.-surgeon, U. S. A., detailed a member of an examining board in New York City and at Governor's Island, N. Y., during the temporary absence of Lieut. Allie W. Williams, asst.-surgeon, U. S. A.

Herbert G. Shaw, lieutenant and asst.-surgeon, U. S. A., member of an examining board at San Francisco, Cal., *vice* William M. Roberts, lieutenant and asst-surgeon, U. S. A., relieved.

Louis A Thompson, contract surgeon, now at San Francisco, Cal., will proceed to Washington, D. C., and report to the surgeon-general for instructions.

Samuel M. Waterhouse, lieutenant and asst.-surgeon, U. S. A., previous orders directing him to proceed to San Francisco, Cal., en route to the Division of the Philippines, revoked.

J. Samuel White, contract surgeon, previous orders revoked. This revocation appears to leave him as relieved from duty at the General Hospital, Presidio of San Francisco, Cal., and under orders to proceed to Fort Gibbon, Alaska, for duty.

Navy Changes.

Changes in the Medical Corps of the Navy, week ended Aug. 17, 1901:

Medical Inspector F. Rogers, detached from the *Brooklyn* and ordered home.

Surgeon J. E. Gardner, detached from the Naval Hospital, Cavite, P. I., and ordered to the *Brooklyn*, temporarily.

P. A. Surgeon M. S. Elliott, detached from the *Annapolis*, and ordered to the *Kentucky*.

P. A. Surgeon E. M. Shipp, ordered to the Cavite Naval Station.

Asst.-Surgeon W. H. Ulsh, detached from the *Glacier* and ordered to the *Annapolis*.

Asst.-Surgeon W. E. G. High, detached from the *Kentucky* and ordered to the *Glacier*.

Asst.-Surgeon J. T. Kennedy, detached from the Marine Brigade, and ordered to the *Brooklyn*.

Asst.-Surgeon H. E. Odell, detached from the Naval Hospital, Cavite, and to duty with the Marine Brigade.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service for the seven days ended Aug. 15, 1901:

P. A. Surgeon H. D. Geddings, granted leave of absence for one month and fifteen days from August 15.

P. A. Surgeon C. H. Gardner, granted leave of absence for fourteen days from August 17.

Asst.-Surgeon S. B. Grubbs, granted leave of absence for three days from August 12.

Asst.-Surgeon J. F. Anderson, relieved from duty at Liverpool, England, and directed to proceed to New York City, and await orders.

Asst.-Surgeon C. H. D. Lord, granted leave of absence for seven days under paragraph 178 of the Regulations.

A. A. Surgeon B. W. Goldsborough, granted leave of absence for seven days from August 11. Granted leave of absence for twenty-one days from September 5.

A. A. Surgeon R. S. Primrose, granted leave of absence, on account of sickness, for 21 days from August 10.

A. A. Surgeon S. D. Robbins, granted leave of absence for thirty days from August 5.

Hospital Steward F. R. Hanrath, granted leave of absence for ten days from August 12.

Hospital Steward M. Walerius, granted leave of absence, on account of sickness, for twenty-three days from August 8.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended Aug. 17, 1901:

SMALLPOX—UNITED STATES.

Kansas: Wichita, July 27-Aug. 3, 1 case.
New Hampshire: Nashua, July 27-Aug. 3, 2 cases.
New Jersey: Newark, Aug. 3-10, 4 cases, 1 death.
New York: New York, Aug. 3-10, 36 cases, 13 deaths.
1 case.
Aug. 3-10, 8 cases.
. 3-10, 1 case.
Washington: Tacoma, July 28-Aug. 4, 3 cases.
Wisconsin: Milwaukee, Aug. 3-10, 1 case.

SMALLPOX—FOREIGN.

Brazil: Pernambuco, June 15-July 15, 81 deaths; Rio de Janeiro, June 1-30, 52 deaths.

Colombia: Panama, July 29-Aug. 5, 7 cases, 1 death.

Egypt: Cairo, July 1-22, 2 deaths.

France: Marseilles, June 1-30, 4 deaths; Paris, July 20-27, 3 deaths.

Great Britain: Dundee, July 20-Aug. 3, 6 cases; Glasgow, July 27-Aug. 2, 2 cases; London, July 20-27, 11 cases.

India: Bombay, July 8-16, 6 deaths; Calcutta, July 6-13, 3 deaths; Madras, July 6-13, 8 deaths.

Italy: Messina, July 20-27, 19 cases, 16 deaths; Naples, July 14-28, 99 cases, 10 deaths.

Mexico: Mexico, July 21-28, 1 death.

Russia: Moscow, July 13-20, 4 cases, 2 deaths; Odessa, July 20-27, 3 cases; Warsaw, July 13-20, 3 deaths.

Spain: Barcelona, July 1-20, 5 deaths.

Uruguay: Montevideo, June 8-15, 12 cases.

YELLOW FEVER.

Colombia: Bocas del Toro, Aug. 2, 1 death.

Costa Rica: Port Limon, Aug. 3, 4 cases, 1 death.

Cuba: July 27-Aug. 3, Havana, 3 cases, 1 death; Marianao, 1 case, 1 death: Pinar del Rio, 1 case; Regla, 1 case, 1 death.

CHOLERA.

India: Bombay, July 6-13, 15 deaths; Calcutta, July 8-16, 2 deaths.

Java: Batavia, June 22-July 6, 63 cases, 43 deaths.

PLAGUE.

China: Hongkong, June 22-July 6, 109 cases, 107 deaths.

India: Bombay, June 8-16, 101 deaths; Calcutta, July 6-13, 16 deaths.

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Original Articles.

THE PRACTICE OF OBSTETRICS.*

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If the question is asked: Is there room for improvement in the general practice of obstetrics, it is answered in various ways.

Those physicians and surgeons, whether obstetricians or not, who have studied carefully the character of the present mode of the practice of midwifery, have but one answer: The daily practice of obstetrics is not what it ought to be for mother, child nor the physician.

Some of the general practitioners, the so-called "lucky fellows," who have attended a large number of obstetric cases without a single sad experience (*sic*) will shrug their shoulders and say: Were it not for the great loss of time connected with waiting upon women pregnant, in labor and confinement, and the poor pay, we should be perfectly satisfied.

There are others in the rank and file of the profession, especially in the country districts, who claim: We are trying to do entirely too much in the practice of obstetrics. Only a few of the labor cases make trouble if permitted to take care of themselves.

Others cry out: Abolish the midwives. They are a source of mischief in the management of pregnancy, labor and confinement.

It is evident, from these statements and my own personal experience, that the present practice of obstetrics is not as satisfactory as it might be to any one class of practitioners of medicine and surgery generally, and the accoucheur especially; and certainly not so far as the average results regarding the mother and child is concerned.

What is the remedy? The writer belongs to those who believe that the practice of obstetrics can and ought to be improved in many ways. The principal questions which concern us are not so much those of time, pay and midwives, but rather of how and where can the best result be obtained.

Antisepsis and asepsis in the management of labor are of inestimable value; many lives have been saved by a thorough appreciation and application of the same. The mechanism of labor, the art of diagnosis of the attitude of the fetus *in utero*, and the art of taking the measurements of the maternal pelvis are well understood. Complications resulting from maternal diseases or deformities, or from malpositions or disease of the fetus, may be recognized in ample time. But what does it avail us when all of these, though scientifically applied, promptly determined and correctely interpreted, can not be properly carried out, successfully executed, or effectually met, because of the patient's surroundings? On this account, the knowledge and skill which we may possess and the care which we are ready to bestow upon the patient, are much reduced in value, and invalidism, disease and sometimes death follow where naught but health and happiness ought to prevail.

The present custom is to attend women in confinement at their homes. Only a small percentage is delivered in hospitals established and equipped for that purpose. By far the great majority of the women who go to maternities do so because they have no home. A few, very few, because they have not the means to pay for the services of a physician (or midwife) and nurse.

During the 26 years of my professional career, of which 15 were devoted to general practice, and 11 almost exclusively to the teaching and practice of obstetrics and diseases of women, I have had ample opportunities to observe and experience the difficulties attending the delivery of women at their homes and learn to appreciate the great advantages which lying-in hospitals possess over the long-established, deep-rooted but old and unscientific custom of confinements at home.

The most luxurious furnished and most favorably situated home, provided with all the modern sanitary arrangements, is not superior in safety to the most humble but well prepared and properly conducted maternity hospital! The reasons for this assertion are apparent, numerous and convincing.

For the sake of illustration let me divide the community into three, more or less, distinct classes:

1. The wealthy who can afford, or do not hesitate at least, to spend money lavishly when it concerns their personal safety and comfort.

2. The middle class, who live in their own modest little home, or, perhaps, in a so-called flat, or, as we sometimes find them, in a well-kept tenement house.

3. The absolutely poor, indifferent and uneducated, who, in the majority of instances, either because of necessity, carelessness or ignorance, occupy but one little, poorly-ventilated room, in a miserable hovel, located in a neighborhood defiled with filth and disease.

Class 1. By reason of their wealth and a comfortable home this class is enabled to engage the most competent and efficient service, an experienced obstetrician and well-trained nurses. One or even two rooms of the capacious residence may be set aside and fitted up like an operating or private room in a maternity. The nurses render everything (the patient and themselves included) as clean, neat and aseptic as it can possibly be done in the best hospital. The physician not only secures a sterilizer, but provides himself with all possible instruments, dressings and medicines in order to meet promptly and, if possible, successfully any complication or emergency that may arise immediately before, during or after the event.

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It would seem that, under the conditions and surroundings just described, in conjunction with the prospect of a handsome fee, it would be a great pleasure and an extreme satisfaction to practice the art of midwifery. No doubt it is so in some instances. But you know that the obstetrician, who wants to provide for every emergency and accident that may befall a woman in her confinement, has a great task on hand. And, forsooth, after he has brought upon the scene everything that might possibly be needed, he may discover to his great dismay, if not intense mortification, as well as the serious disadvantage of his patient, that he has forgotten the very thing he wanted most—though simple and insignificant it may be.

There is an impression abroad that the modern obstetrician puts his patient to much needless trouble, because of his extensive preparations. This is, apparently, supported by the daily observation that women pass through confinements with apparent safety to themselves and the newly born, in many instances without the aid of a skilled and experienced accoucheur, a trained nurse, and sometimes even with or without the help of a midwife. The above impression is fur her supported by the occasional loss of a mother or child, or both, in spite of all previous preparations, the presence of talented assistance and the greatest possible care during the labor. There are even "good" (?) doctors who counsel against the taking along any kind of instrument "for fear of using the same." These gentlemen always smile significantly when they see a young, well-trained and conscientious physician go to all the so-called "needless" trouble of preparing a woman and her surroundings for the approaching confinement.

Class 2. Nearly all of what has been said of the wealthy holds good of the middle class. There will be, however, but one nurse, if any, and she may or may not have had a systematic training; quite often she has no training at all. There will be no room especially set aside and prepared for the confinement. The most liberal and thorough use of antisepsis will only result in an imperfect aseptic condition of the patient, her bed and surroundings. The doctor's remuneration is very moderate, as a rule; sometimes it is distressingly small and occasionally it is not paid at all. This is especially true if all is not satisfactory. At any rate, in every instance the management of the case is handicapped from the beginning; its conduct becomes difficult and dangerous to the patient and rests like a heavy burden upon the obstetrician in charge. Let unforeseen complications arise or accidents occur, the embarrassment which follows because of the inability to meet them properly and promptly is often great and, not infrequently, leads from bad to worse and may result in serious injury, disease and even death. The obstetrician has labored hard. He is worn out by long-continued physical effort and prolonged mental strain in his anxious attempt to bring the case to a successful termination. He retires from the scene fully conscious that he has done his duty. He also knows that there will be no reward for his work, aye, that he will be damned if the result be an unfortunate one.

Class 3. The absolute poor, indifferent and uneducated, as may well be imagined, fare worse by far than the two preceding classes. The wonder is that any of the mothers escape the evil consequences of lack of proper attention, the dangers of sepsis, and that so many of the children survive, live and grow up.

As a rule there is little or no provision made for the care of the mother and the arrival of the infant. The assistance obtained is often seriously wanting in promptness and earnestness as well as knowledge and experience. Of late years, in the larger cities at least, outdoor obstetric clinics have been established; they are supported by colleges and maternity societies. Through these clinics the condition of the patients belonging to this class and who avail themselves of the advantages of those institutions, is somewhat improved, but far from tolerable. A recent graduate or senior student of medicine and sometimes a trained nurse is the help furnished these women. They are provided with antiseptics, sterilized dressings, etc.; but when difficulties and serious complications are threatened or do occur, the patients are promptly transferred to a hospital. It is because of this that the records of the outdoor clinics remain good, while the records of the hospitals correspondingly suffer. When a transfer to the hospital is refused, or the condition of the patient forbids removal, the officers of the clinic are called in to direct the future management of the case, and, sometimes after a great deal of hard work and plenty of time, the patient recovers. To what extent will always remain a question.

Probably the best evidence that the practice of obstetrics is not what it ought to be lies in the fact that, while we have plenty of teachers of obstetrics, we have not, in the ordinary meaning of the term, a single specialist in this department here or elsewhere. Why? 1, because there is not money enough in the practice of obstetrics to maintain a man and his family respectably; 2, because the work is hard and full of responsibility; and 3, it is often associated with unmerited blame and unjust criticism, to say nothing of the loss of time, sleep and irregular hours generally. Is there anything that upsets the busy practitioner's work more than a case of labor? This is the rule. The exceptions are few. There is, so far as my observation goes, no satisfaction in the private practice of midwifery as it is conducted at the present day.

From what has been said it would seem that little, very little, can be offered in favor of attending women (rich or poor) in the act of birth at their homes. The only objection to hospital deliveries that I have thus far heard and deserving of an answer is: "There is more danger of sepsis in the hospital than at home, because septic cases are constantly sent to the hospitals." It is true that septic cases are—and they should be—admitted to maternity hospitals. Why? Because there women thus affected have the be [illegible] ecover. This alone speaks volumes in [illegible] It is so because the necessary provisions have been made for the accommodation of these cases. Not only are the septic patients kept separate and by themselves, but superior facilities exist—or should exist—to treat these cases not only effectually and successfully, but to prevent a spread of the malady at the same time. More than that; the disease should be actually stamped out, if everything is done that can be done with that object in view.

The argument that women love their homes and abhor the idea of going to a hospital for the purpose of confinement is only a sentiment begotten of custom and deserves no special refutation. Let women once appreciate that the hospital is the safest place for them to pass through the ordeal of labor, they will seek it of their own accord.

There was a time, not so very many years ago, when the men who argued in favor of hospitals as the proper place for the performance of a major surgical operation of any kind, were looked upon as unreasonable, selfish, short-sighted individuals; they were regarded as men prompted by greedy motives, nothing else.

How many capital operations are performed to-day at the houses of patients? Very few, indeed! At present men, women and children are taken to hospitals, not only for the purpose of having dangerous operations performed upon them, but they are taken there for trifling injuries and diseases. The results are good; better than before. Consequently everybody is satisfied. Objections are seldom heard.

Will anybody argue that the act of giving birth to a child is not a capital operation? Or an event free from special danger? Who will claim that every woman pregnant is hopeful and cheerful, because she knows she will pass through her labor safely and unharmed? Who is there that can always predict with certainty that there will be no complications and, if there are, that he can meet them with as much success as in a hospital equipped for this specific purpose?

A simple ovariotomy does not carry with it so grave an element of danger as does a normal case of labor. Yet every abdominal surgeon knows that, when he performs ovariotomy, though simple in its aspects, at the house of his patient, he does so at a greater risk than at the hospital. The care is far greater and the responsibility he assumes much more grave when he operates at the house. At the hospital he has but to say what he intends to do and when he wants to do it. Everything is then prepared for him. He has no care of minor details and he can concentrate his whole mind upon the work to be performed. Not so when he operates at the home of the patient. Here he must himself supervise all the details necessary for the success of the operation and the recovery of his patient; and still he runs the risk that, just prior to, during or immediately after the operation, something very important is wanting or has been left undone.

This is never more true than in a labor case attended at the patient's home; and yet, both the women and the great majority of physicians object (some of them earnestly and persistently) to maternity hospitals. Why? Because the former are not accustomed to it; the latter are apprehensive that they may lose a stronghold upon their patrons through which and through whom they believe to obtain the good will and confidence of the one and other families.

The prejudice against hospital deliveries can be as easily overcome, in my opinion, as the antipathy which existed in the past against the hospital for any kind of treatment, medicinal or surgical.

I have had occasion to attend ladies in confinements who were suddenly taken in labor while traveling, and who had no other choice than to go to a hospital. Some of them had had previous, others subsequent experiences of the same kind at their homes. All were unanimous in their expressions that the hospital is the better and the most convenient place for confinement purposes. It, too, has been my satisfaction of late not only to deliver the wives of prominent citizens at the hospital, but also the wives of some of my professional brethren. In every instance the difference between home and hospital was keenly appreciated and the verdict invariably in favor of the latter.

The fear that the family physician will suffer by the change and that the young physician will be deprived of a legitimate opportunity to "obtain practice," is imaginary, not real. Maternity hospitals should be so conducted that they would please the humblest as well as the most fastidious. Let the patient and her friends make their own selection of accommodations. The absolutely destitute should be admitted free of charge. Others should pay what they can, or for what they want. The latter two classes have the privilege of employing their own physician. This gives the family physician, if there is one, still the first choice. This being so, the doctor not only continues to sustain the same relations to his clientele as before, but it makes his work easier, safer and more satisfactory. He need no longer trouble himself with the minor details; the help he may want is there and already well trained; whatever instruments, dressings or other articles he may need without delay, will be ready for use; all he is to do is to look to his own aseptic condition and then help himself or ask for what he may need. His results will, therefore, be better; the work itself much more agreeable and not half so burdensome as when the patient is delivered at her home. He will thus save the patient's health and wealth, himself a great deal of time and worry, increase his reputation and be better paid in the end, financially and otherwise.

In our larger cities hospital accommodations are already very extensive, but by no means sufficient. The smaller cities and towns are beginning to build hospitals, and there is no good reason why the smallest village should not erect a hospital for this purpose alone, if not for any other. Where hospitals do not or cannot exist the practice of obstetrics must, of course, be carried on as in the past.

POSITION OF THE WOMAN DURING DELIVERY.*

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The literature of this subject is practically confined to two questions: 1. What effect has posture on the mechanics of labor? 2. How does posture affect the pelvic diameters?

It is not the purpose of this paper to discuss either of these questions; but rather to consider posture with reference to its bearing on sepsis, and to determine, if possible, what position is most conducive to an aseptic technique. The plan of delivering the woman as she lies in bed—the amniotic fluid, the child, the blood, the placenta and often fecal matter being received by the bed or its protections—has had from antiquity to the present, the sanction of universal custom. With such conditions an aseptic technique is incompatible. In the homes of those who are able to command the comforts and some of the luxuries of life, these unfavorable conditions can be greatly modified.

Given a clean patient in clean garments, a firm mattress with clean protectives, sheets and pads, together with a competent nurse, and the danger is largely, though by no means entirely, eliminated. Under the most favorable circumstances there are dangers of infection which would not be tolerated in a surgical operation. When the head is on the pelvic floor, in spite of all preliminary preparation, fecal matter may escape coincident with the pains; and, if the labor is about to terminate, the nurse has not the necessary time for again cleansing the patient. Infection may occur through soiling the hand, which in the necessary haste, the accoucher might easily overlook. Or an accumulation of fluids may float fecal matter into contact with lacerations or abrasions or even into the vagina. The serious infections of the colon bacilli probably occur in some such way. Unless the mattress be exceptionally firm, the woman's hips occupy a depression which will be filled with fluids. When we recall the relaxed condition of the vaginal outlet at the end of labor, the wonder is that infection does not oftener occur.

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This danger of immediate infection is not lessened by the Kelly pad as ordinarily used. It protects the bedding admirably. But with the woman in the ordinary position on the ordinary mattress, fluids will not drain away from the parts, owing to the depression in which the hips lie. The pad prevents the rapid escape and absorption of fluids, and by holding a pool about the vulva, the chances of infection are increased. This objectionable feature is sometimes overcome by following the English custom of placing the woman on her side with her hips well to the edge of the bed. In this position the Kelly pad can be well utilized. But it is a position in which it is difficult to control the patient, particularly when she is partially anesthetized. It involves flexion of the thighs which distinctly increases the danger of perineal laceration. And, moreover, it is a position which has never met with favor in this country.

For years it has been the invariable custom of the writer to deliver in the following position: The woman lies on her back across the bed, her hips well to the edge and on a Kelly pad, so arranged as to carry fluids into a vessel on the floor. For this purpose, the small square pad is most suitable. The patient's legs are separated and extended. They are supported by assistants, by a couple of suitably placed chairs, or—and preferably—over the knees of the obstetrician, who sits on a chair facing the bed at a convenient distance. She should wear her stockings, her thighs should be enveloped in clean towels and she should be covered with a sheet. This position is maintained from the end of the first stage until the termination of labor, unless the second stage be tedious. In that event, the patient can resume her ordinary position in bed, to be again brought into the position described before the end of the second stage. The position is not tiresome to the patient or physician and can be maintained for hours without discomfort to either.

The first thing after placing the woman in this position, is to have the nurse thoroughly cleanse the external genitals and inner surfaces of the thighs with a generous application of soap and hot water, followed by an antiseptic solution. This should, for obvious reasons, be a routine procedure, irrespective of previous preparation. It corresponds to the final preparation of the site of a surgical operation. It is claimed for this position that, with intelligent management, the parts so cleansed will not be infected during the labor. In case fecal matter escapes during a pain, it gravitates at once to the vessel on the floor, and all traces which could offend the sense of sight or of smell, are swept into the vessel by the free application of an antiseptic solution. The maintenance of a fixed position is unquestionably favorable to asepsis. The patient is less likely to contaminate the parts than if she were permitted to frequently shift her position. The physician can much more certainly keep his hands clean than if he were compelled to move about to accommodate himself to the changing position of his patient. He is constantly prepared to render assistance, and thus avoids the too common blunder of managing the termination of labor with hands improperly cleansed, on account of haste at the last moment.

This position also reduces the number of vaginal examinations. The examinations usually made from time to time by the accoucher, that he may be apprised as to the probable termination, are not necessary. Within reasonable limits, the time makes no difference, as the position insures constant readiness on his part.

This position, better than any other, insures control over the advance of the head as it is about to emerge. In the ordinary position the degree of control is by no means satisfactory. Unless anesthesia be profound, the woman is likely to toss about at the critical moment. This often results in a needless degree of laceration. The position advocated eliminates this unfavorable element. The patient, unable to secure points of resistance for her feet, can not change her position. The obstetrician is in complete control and can delay, to the most favorable time, the delivery of the head and can manage accurately the rate of advance when it is delivered.

When delivery occurs, first the head and then the body is grasped, and the child is carried up over the pubes. The nurse places the blanket, in which the child is to be wrapped, across the abdomen and pubes of the mother. On this the child is placed transversely and low enough to permit of ready manipulation of the uterus. This avoids the danger to the child of infecting the eyes or cord with fecal matter and there is less liability that it may aspirate fluids into the air passages. Before the child is moved the cord is dressed and dressing secured by a binder. To allow quite an interval to elapse between the cutting and the dressing of the cord, with the possible danger of infection, is an unsurgical procedure. The facility afforded by this position for the delivery of the placenta and for the detection and repair of perineal laceration needs no comment.

Of no very slight importance is the ease with which the patient can be cleansed at the termination of labor. No other position permits such free use of water. If ordinary care has been used the woman is clean and her garments and bedding spotless.

We have been considering that small minority of patients who live in well-appointed homes and command the services of the trained nurse. The vast majority of child-bearing women are unable to secure these safeguards. The membership of the lower classes is prolific as well as numerous. Living, as they do, in cramped quarters, the bath-tub an unknown luxury, it would be unfair to expect a high standard of household or personal cleanliness. In isolated cases, the housewife rises superior to her surroundings and is a model of neatness and cleanliness. She is the bright exception to the general rule of dirt and disorder. If the woman of this class is able to have in readiness, at the time of her labor, a change of linen for her bed and a few clean towels, she feels entitled to credit. She probably depends for nursing on some member or friend of the family; or much worse, on a so-called nurse, but one without training, and whose ignorance of asepsis is equalled only by her assurance, and her readiness to act on her own initiative and in defiance of instructions. In this class the young physician, struggling to make his way, finds most of his obstetric work. Should he choose the usual position for delivery, his examinations are fraught with danger. Bedding and patient are likely to be in a sorry plight at the end of labor, and the chances are that these conditions will continue during the lying-in period.

If he adopts the position herein recommended he needs only soap and sterilized water to insure safety to his patient. A liberal application of soap and the use of a large fountain syringe of hot water, followed by an antiseptic solution, comprises a ready means of cleansing the external parts. If necessary, this can be done by the physician, and there is need of little or no exposure. If he will exercise the forethought to sterilize forceps, ligatures, sutures, needles, scissors, etc., and place these within convenient reach, it will be unnecessary for him to leave his chair until the labor has terminated and every necessary detail has received attention. He is in complete control of the situation and protects his patient from infection in the most unfavorable surroundings.

Incidentally, in an emergency such as post-partum hemorrhage, this position is advantageous. There is necessarily a prompt notification of the danger, and the woman is already in the most favorable position for treatment. Moreover, the young physician will find the position the best for studying the mechanism of labor.

In conclusion a brief recapitulation embraces the following claims for this position:

1. There is less liability of infection with fecal bacteria.
2. Fewer examinations are necessary.
3. There is better control of the head at the time of delivery, and consequently less danger to the perineum.
4. The woman can be more thoroughly cleansed after labor, and clothing and bedding are not soiled.
5. There is less danger of infecting the eyes or cord of the child and less risk of its aspirating fluids into its air passages.
6. In managing cases in the unfavorable environments of the lower classes, the position is especially valuable to the young physician, whose experience is gained largely among these classes.

THE PROPHYLAXIS AND TREATMENT OF PUERPERAL SEPSIS.*

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The recent developments in bacteriology and pathology have demonstrated conclusively the fallacy of the previously accepted theory of the essentiality of puerperal sepsis, and likewise have been able to explain its manifold manifestations by showing that wound infections and puerperal infections are identical and may be due to a variety of pathogenic organisms. Streptococcus, staphylococcus, bacillus coli communis, gonococcus and pneumococcus are the most frequent causes of puerperal infection, while the bacillus of diptheria, anaerobic and other micro-organisms have been demonstrated to be occasional factors in the pathogeny.

Streptococcus pyogenes is found in the body under a variety of circumstances, and is probably the most important cause of septicemia and pyemia following wounds of ulcerative endocarditis, of tonsillitis and erysipelas. Bacteriologic investigation shows it to be the most frequent cause of the various septic processes following labor, and it may be found pure or associated with other organisms. It has long been recognized that its manifestations are varied and that they depend upon several factors: the nature of the organism; the soil; the dose of virus, and the place of entrance. The most important factors are the virulence and character of the infecting organism. Variation is common to different specimens of the same species. Under certain conditions the virulence is increased, while under others it may be decreased or attenuated. It may produce abscesses at the point of inoculation, which may, or may not, become diffused throughout the body, or it may even cause death without the appearance of any local change.

The staphylococcus and colon infection are as a rule milder forms of sepsis, but Strunkman has collected twenty-five fatal cases of the former and three of the latter. The writer has seen one fatal case of staphylococcus aureus and two of the colon variety.

The parturient tract has been aptly compared to a surgical wound and it is easy to conceive, that, with the contusions and lacerations together with the lowered resistance of the system incident to labor, the conditions are very favorable for the development of germs when once they are introduced. According to Widal, Baum, and Gärtner, the placental site is the favorite point of invasion of the infecting germs, either by way of the lymphatics, or veins, or both. Yet infection frequently takes place from wounds of vagina and cervix.

The results of the bacteriologic examination, with regard to the presence or absence of pathogenic germs in the vaginal secretion under ordinary conditions, are by no means in harmony. Gonner and Döderlein in 1887 investigated the subject and, while the former obtained negative results, the latter obtained many varieties of pathogenic organisms, including streptococci. Since then, numerous capable observers have investigated the subject with variable results. Menge, Kronig, and Williams have gone over the work very carefully and find that the uterus and vagina, under ordinary conditions, are sterile as regards pathogenic organisms, and, that the discrepancies of other observers are due to faulty technique in obtaining cultures. Further, the investigations directed more particularly to the vulva, show that it is rarely, if ever, free from pathogenic organisms, and that it is almost impossible to render it so.

Döderlein attributes the absence of pathogenic organisms in the vaginial secretion to the bactericidal influence of the acid products of the vaginal bacillus. Kronig does not think this view justifiable and believes that several factors play a part, namely: chemical substances in the secretion, probably acids; antagonism of the bacteria living in the vagina to imported bacteria; leucocytosis and phagocytosis; lack of oxygen and tissue juices.

From the foregoing survey of the literature, it is seen that the uterus, under normal conditions, is sterile and some hold a similar view regarding the vagina; but all authorities agree that the vulva is scarcely ever free from pathogenic organisms. We can readily understand then, how easy it is to infect the vagina and uterus even by simple internal examination, or the giving of a douche. Further, the experiments of Bumm, Döderlein, Kronig and others show that antiseptic douches tend to impair the normal bactericidal influence of the vaginal secretion, and, as the pathogenic organisms are not destroyed, or diminished in number, their use should be dispensed with. Pestalozzi reports 4000 cases confined in the Maternity in which no ante-partal or post-partal douches were employed. It was only necessary to isolate 33 and of these, 30 recovered. These results are in accord with those reported by Leopold, Merman, Goldburg, Zweifel and others who have treated cases with and without douches. Again, let us compare the results obtained in the lying-in hospitals of Europe before the pathologic anatomy period, in which only prophylaxis was used. Vienna from 1786 to 1822, had a total death-rate of 6 per cent. in 44,858 cases. The Dublin Rotunda Lying-In Hospital in 93 years, from 1757 to 1849, had 1.23 per cent.; and the British Lying-In Hospital during the same period shows a mortality of only 2 per cent. It can hardly be sustained that the antiseptic treatment has accomplished all that has been claimed for it.

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So it is seen that recent bacteriologic and clinical investigations are in accord, and the antiseptic treatment, which has steadily gained ground from the time that Semmelweiss showed a causal relation of cadaveric poison to puerperal sepsis, is gradually giving away to the more rational idea of asepsis. Routine douches, before and after labor, are being discarded, and our attention is being directed to the thorough cleansing and the disinfection of the external genitalia, of the hands of the physician and nurses, of the instruments, dressings, etc., and to the avoidance or restriction of internal examinations.

The treatment should vary according to the character of the infection. It may be local, with a view of removing or destroying germs at the point of infection; or general, by use of measures to neutralize the introduced bacteria or their toxins, and to fortify the system in its struggle against the infectious germs; or surgical, to remove collections of pus, and organs that may have become a menace to the welfare of the patient. It is well to regard every case of fever occurring during the puerperium as septic, until proved not to be so by a searching investigation. Our first duty, after obtaining a history of the case, should be to make a careful and thorough bimanual and specular examination of the uterus and pelvic organs. If there be lesions of the external genitals or vagina, they should be appropriately treated and the uterus not invaded unless indications point to infection of that organ. The possibility of pus existing in the pelvis before labor, due to pyosalpinx, ovarian or appendiceal abscess, should be borne in mind. If these and other causes of pyrexia, such as malaria, typhoid fever, etc., can be excluded, the uterus should be gently explored with the finger, or, dull curette, and any placental debris or clots removed. If possible, a bacteriologic culture should be taken directly from the uterus, and then an intra-uterine douche, preferably of sterile water, or sterile salt solution, should be given. Should the bacteriologic examination reveal saprophytic infection, the douche may be repeated, especially if the temperature remains elevated and a foul-smelling discharge continues.

If it proves to be a case of pathogenic infection, further local treatment is contraindicated, as it can not possibly reach the organisms which have penetrated beyond the reach of such measures. If the infection has spread into the broad ligaments, as may be manifested by the extension of the pain over the region and the revelation of a boggy sensation on vaginal examination, the lymphangitis and localized peritonitis must be combatted by the application of the cold pack, or preferably, the rubber coil applied to the lower abdominal region, and the giving of anodynes to relieve the pain.

I am confident that the repeated giving of intra-uterine douches and the use of the curette in streptococcus infection, is decidedly harmful. The danger of introducing other germs and causing a mixed infection, and, the production of more or less traumatism of the endometrium, thereby breaking down Nature's protective zone of leucocytes, and opening up new avenues for wide-spread systemic infection, are strong arguments against injudicious local treatment. Again, the use of large quantities of the bichlorid of mercury and other antiseptic solutions, as recommended by many authorities, would seem to be irrational because of the invasive qualities of the streptococcus; it can not exercise its germicidal effect, besides there is great danger of poisonous effect from absorption. Douches are only necessary to wash away any retained debris, therefore sterile water and normal salt solution are to be preferred, as they are harmless.

The general treatment will embrace the use of strychnia, nitroglycerin and stimulants to strengthen the heart. The amount of stimulation that septic cases will bear, is surprising. I have seen so much as a quart of brandy used daily for two weeks with good results. Antipyretics should not be given as they depress the heart; quinin is of little avail, except in malaria—besides, given in large doses it is apt to derange the stomach.

Nuclein and albumose have been used for the purpose of increasing leucocytosis, and in recent years normal salt solution subcutaneously, or by the bowels, is being received with much favor. It is a rational measure—for it flushes the kidneys, eliminates the toxin and stimulates the heart. Mace, Fouchier, and others, recommend baths at a temperature 77 F., repeated every three hours and claim to have obtained good results.

The results from the use of anti-streptococcus serum have on the whole, been disappointing. Statistics show the mortality to be about 35 per cent. Many of the failures may have been due to the inferior quality of the serum. It is important to determine whether the case be one of simple or mixed infection. Curative effects are claimed for only a simple streptococcus infection. The most plausible explanation of failure would seem to be that offered by Smith, who says: "When we come to deal with those bacteria which do not produce a soluble diffusible toxin, but which have poisons either stored up in their bodies or represented in their body substance, the production of a satisfactory therapeutic serum has not yet been placed beyond doubt. It would seem that immunity towards these latter poisons can not be pushed beyond the endurance of a relatively small dose, and certain investigators have, for this reason, looked upon bactericidal functions of immune serum as the only hopeful prospect. It is now generally known, from the work of Pfeiffer and others upon typhoid and cholera bacteria, that such serum, which does not manifest, outside of the body, more than agglutinative power, does actually start bactericidal forces in the animal body, when introduced with the bacteria.

It is probable that the action of the streptococci is subject to the same laws. If this phenomenon should be found generally true of the invasive bacteria (that is, those which enter the body and multiply therein, and not simply act from some one point through absorbed toxins, as is the case with diphtheria), it follows that any serum-therapy, so-called, to be successful, must come into play either before, or immediately after the time of infection, in order that the multiplication of the bacteria may be checked before much poison has accumulated. It is probable that, between the strictly toxin-producing and the infectious bacteria, transitional species will be found for which an anti-toxin may be of some use because of the presence of traces of toxins set free by the bacteria. This hypothesis may account for the favorable results occasionally reported after the administration of streptococcus serum."

In our experience, the serum in cases of pure streptococcus infection seemed to have a beneficial influence, and, during its exhibition, local and general treatment was withheld. It is impossible to say how much value the serum per se was, in these cases; but the gradual lowering of the temperature in from 7 to 24 hours, with a corresponding reduction and steadying of the pulse, attended by a profuse perspiration and marked improvement in the subjective condition after each injection, would seem, in the absence of any other measure having been used, to have exercised a salutary influence.

The most perplexing problem we have to solve in the treatment of sepsis is, when is surgical intervention necessary? No one will question the necessity of removing the uterus and its adnexa, if they are infiltrated with foci of pus which can not be properly drained; or, of evacuating purulent collections, whether they be in the pelvis, peritoneal or pleural cavity; but when shall we operate? Those of us who have had in maternity services the opportunity of observing the varying phases of puerperal sepsis, know, that there is a tendency to recover along conservative lines, and that a very small percentage require operation. Furthermore, there is great danger of converting a localized infection into a general one by the use of intra-uterine douches and the curette. If we carefully analyze the mortality statistics of septic cases treated surgically, we can not but be impressed with this fact—that too little attention is devoted to a systematic clinical observation and the study of the various forms of sepsis. What is needed, is greater care in the study of the differential diagnosis. Bacteriology and pathology are gradually adding to our knowledge in this direction. We know that the streptococcus is the most virulent and frequent variety, and when it spreads beyond the genital tract, it does so by way of the lymphatics or veins, or both. We also know that the peritonitis which follows is primary, but that the tubes and ovaries are only affected secondarily, if at all. On the other hand, gonorrheal infection spreads by continuity of the mucous membrane and invades the tubes and ovaries primarily, while the peritoneum is involved secondarily. Staphylococcus, colon, and other pathogenic organisms, act in a similar manner to the streptococcus but in a milder degree. However, the clinical features differ. In an infection by the streptococcus the pulse rate is apt to be rapid and out of relative proportion to the rise of temperature, and the constitutional symptoms are usually well marked. On the contrary, in staphylococcus, colon, gonorrheal and saprophytic infection, the temperature may at times be high but the pulse rate is relatively lower.

In conclusion, then, the treatment of sepsis will depend upon the skill and judgment of the physician and the condition of the patient. It would not be justifiable to open the abdomen without some physical reason. The different forms of sepsis should be thoroughly understood, for an operation will hardly be required except in pathogenic infection. When the operation is performed early many organs will be needlessly sacrificed, and if performed late, the mortality will be increased. When there is continued fever with increasing physical signs, the operation is permissible; without the latter, general symptoms would indicate systemic infection and surgical measures can only hasten the end.

THE INDICATIONS AND CONTRA-INDICATIONS FOR THE USE OF THE CURETTE IN OBSTETRIC PRACTICE.*

HENRY D. FRY, M.D.
WASHINGTON, D. C.

The curette is a valuable instrument, in the hands of the obstetrician as well as the gynecologist. The indications and contra-indications for its employment are less understood in the practice of the former than of the latter, and much harm has resulted from its indiscriminate use.

In the earlier days of antiseptic midwifery puerperal fever was fought by active intra-uterine treatment, curettage and irrigation, without selection of cases. Even to-day, too little attention is paid to a consideration of the subject, and while the curette is valuable in one class of these cases, it is equally injurious in another.

The object of this paper is to bring out the experiences of the members of the Section; to break away from the old routine custom of using the instrument, and to point out clearly in what class of cases to use, and in what class to discard, the instrument.

We must bear in mind that it is employed in place of, and as a poor substitute for, the finger to remove foreign substances from the uterine cavity, as pieces of placental tissue, retained portions of membranes, blood clots, etc. In abortion, when the cervix can not be dilated sufficiently to pass the finger the curette must be used as a substitute; and again, when the expulsion of the product of conception is in the later months, the finger is unable to reach the fundus uteri. The indications for its employment to remove retained products of conception and blood clots are clear. The complications following abortion and miscarriage are almost invariably due to the retention of some part of the ovum. This is manifested by hemorrhage or fever, one or both. The hemorrhage may be coincident with the casting off of the ovum or some part of it, or it may continue afterward uninterruptedly or in recurrent attacks. *Decomposition* of the retained tissue accompanied by a foul odor to the discharge and febrile reaction is another complication. There is no question of doubt regarding the indications for the use of the curette in these cases. The removal of the offending material promptly stops the hemorrhage or fever.

Unfortunately, the treatment of incomplete abortion and miscarriage is too often expectant. Indifference on the part of the practitioner or a desire to consider the case unimportant leads to a neglect of radical treatment. Again, in many cases, a let-alone policy is followed because the general practitioner, to whom a large share of this work falls, modestly considers himself unequal to the emergency. These cases come under his care so often in the course of his daily practice, it is his duty to familiarize himself with the method of treatment necessary.

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In incomplete abortion and miscarriage when the cervical canal is sufficiently dilated, the finger is used to clean out the uterus. In most cases the patient should be thoroughly etherized, the uterus depressed with one hand on the fundus, the other hand inserted into the vagina and one or two fingers passed into the cavity of the uterus. Retained and attached portions of placental tissue are removed, a hot intra-uterine injection given of sterilized salt or antiseptic solution. If the uterus is thus cleaned out all hemorrhage is checked and the case pursues an uninterrupted convalescence.

If the case be not one suitable for this simple method of treatment, curettage may be preceded by a short preliminary treatment with the tampon, in hopes the uterus may expel its contents. Failing to do so in twenty-four or thirty-six hours, the curette should be used, preceded generally by a rapid dilatation of the cervix. Except under anesthesia, the operation can not be done satisfactorily. Asepsis is a necessary part of the technique. During curettage the removal of blood clots which plug the uterine sinuses is frequently accompanied by severe bleeding.

The hot intra-uterine douche or gauze tamponade of the uterus will be necessary. The gauze should be removed in twenty-four hours and the uterus washed out with a hot sterile douche. Rest in bed and hot vaginal douches will complete the course of treatment.

We have dealt with the treatment of incomplete abortion and miscarriage with hemorrhage and fever. The fever is due to the absorption of ptomains produced by the action of the bacillus of putrefaction upon the foreign matter contained in the cavum uteri. The removal of the offending mass with the curette gives results that are all one can wish. The good effect that follows the treatment in these cases has led to its abuse in fever after childbirth.

In cases of criminal interference with pregnancy we often have to deal with a different and more serious infective agent than the saprophytic germ. Fever is now, unfortunately, too often due to streptococcic infection. Under these circumstances, the indications for curettage are similar to those met with after childbirth and we will consider the two together. Whereas great benefit is derived, as we have already seen, by the use of the curette in removing material acted upon by the bacillus of decomposition, on the contrary, harm will follow its use when the infection is streptococcic. By use of the curette it is impossible to get rid of streptococci. Nature makes a noble and often successful resistance by throwing out a protective zone of inflammatory tissue at the point of infection. Leucocytes swarm to her assistance and take up their burden of the fight to resist the aggressive germs.

Now, what does the curette do in these cases? It simply breaks down the earthworks, scatters the defenders and opens a door of entrance to the invaders. The infection, instead of being localized is made general. The clinical history bears out the statement. Cases of streptococcic infection invariably get worse after curettage. A chill shows systemic infection; the symptoms are all aggravated, and more cases end fatally than when the curette is not employed.

Hence, it is of prime importance in a given case to ascertain the nature of the infective agent, or agents, before resorting to the curette. The foul discharge that accompanies the action of the bacillus of putrefaction is a safe guide to indicate the use of the instrument. In the absence of that sign the indication is not clear, and we must rely upon the culture test.

The culture is taken by introducing a sterile glass tube into the uterus and with a syringe attached to the other end, the uterine discharge is sucked into the tube. It is then placed in a culture tube containing agar-agar. The growth of the organism will demonstrate its character in twenty-four hours. To be of value, the culture must be taken with the strictest detail to aseptic work. After having taken the culture, the uterus is thoroughly douched out with sterile salt solution and no further local treatment instituted for twenty-four hours, or until the result of the culture is known. If it prove to be streptococcic the curette is contra-indicated.

In another class of cases the curette does harm. Infection may exist in some laceration of the vulva, vagina, or more often, the cervix. The cavity of the uterus is not involved. The use of the instrument under these circumstances is uncalled for and will likely spread the infection into the uterus.

At the risk of being found guilty of repetition, we will consider the indications and contra-indications for the use of the curette by taking a hypothetical case. A woman having given birth to an infant, in three or four days afterward suffers from a fever, which is preceded or not by a chill. All the usual symptoms of puerperal fever are present. Shall we or shall we not curette? Believing that the curette does harm in some of these cases we must look for clear indications for its use. First carefully inspect the external genitals, the vagina and cervix. In not a small proportion of cases the door of entrance for the germs is located in one or other of these parts, and in such it is evident the curette would do harm by carrying the infection into the uterine cavity. If, on the contrary, the examination be negative, and the indications point to intra-uterine infection, the next point to decide is the character of the infection. The presence of a foul odor to the discharge would justify the careful use of the curette. A culture should then be made of the discharge and the cavity thoroughly injected with hot sterile water or salt solution. In the absence of foul discharge the curettage should be omitted, but the culture taken and the preliminary injection employed. After twenty-four hours the culture growth will demonstrate the nature of the infection. If other than saprophytic the curette must not be used.

Streptococci are the most common and serious germs encountered in puerperal infection, but the same rule regarding the use of the curette applies to others, such as the staphylococcus, gonococcus, colon bacillus, etc.

In obtaining the culture the external parts should be cleaned and washed in bichlorid, the hands and instruments must be clean, the cervix exposed and held with a double tenaculum or bullet-forceps. The sterile glass tube is passed into the cavity of the uterus, a syringe attached to the other end with a short rubber tubing and some of the fluid drawn into it. The cotton plug is removed from a culture tube containing the agar-

agar and the discharge inserted. During the twelve or twenty-four hours required for the growth of the organism the case is treated on general principles.

The clinical history of the case presented, as well as the history of confinement, aid materially in making the diagnosis before the bacteriologic test is available.

A final word of caution to the inexperienced may not be out of place, regarding the danger of using the curette in a septic uterus. The walls are easily punctured or torn, and any approach to force is unwarranted.

A CASE OF STREPTOCOCCUS INFECTION FOLLOWING LABOR—OPERATION AND RECOVERY.[*]

WILLIAM H. HUMISTON, M.D.

Associate Professor Gynecology in the Medical Department of Western Reserve University; Gynecologist-in-Chief to St. Vincent's Charity Hospital; Consulting Gynecologist to the City Hospital, Etc.

CLEVELAND, OHIO.

A primipara, aged 23 years, was delivered with forceps after six hours in labor, on Nov. 26, 1900. On the third day, after a slight chill, the temperature rose to 103 F. The uterine cavity was douched with a mild antiseptic solution. Failing to get a result from this procedure, the curette was employed, and thereafter daily intra-uterine douchings.

On December 5, the sixth day of the fever, I saw the case in consultation. Temperature was 100, and the pulse 120, irregular and weak. The fundus of the uterus was midway between the symphysis pubis and the umbilicus. There was no tympanites and but little tenderness of the abdomen. A deep laceration of the perineum, which had been repaired after delivery, but opened again, and the torn surfaces of the cervix (right lateral tear) were covered with a grayish slough, which in appearance was not unlike that of diphtheric origin. There was marked cellulitis to the right of the uterus extending to the pelvic wall.

I advised an incision and drainage of this mass through the vagina. The family desired to temporize, as the patient then seemed to them to be a little better. However, on the evening of that day they reported that a sudden change for the worse had occurred following a severe chill. The temperature as recorded was 103, and the pulse-rate 160. The patient was vomiting and complained of severe pain.

She was admitted to the hospital early on the following morning. Her temperature was 104 and pulse 160, arrhythmic, irregular and of small volume. Her general appearance was that of grave toxemia. There was great abdominal distention and increased tenderness. She was having a septic diarrhea. A small quantity of urine was obtained by catheterization and found to contain granular casts and renal epithelium.

After thorough cleansing of the vagina and the uterine cavity, the latter was packed with iodoform gauze. A very free incision was then made through the posterior vaginal vault, and the dissection carried upward and between the folds of the right broad ligament. There were several small foci of beginning softening in this area of cellulitis, but no pus formation as yet. When the pouch of Douglas was opened a large quantity of bloody serum, streaked with whitish flocculi, escaped. Examination of the Fallopian tubes showed that they were not involved in the process. After carefully drying the parts, two small pieces of rubber tubing were used for draining the cul-de-sac and the broad ligament. Iodoform gauze, rinsed in hot salt solution, was used to pack the cavities. During the operation two quarts of normal salt solution were injected under a breast.

Cultures were taken from the cervical canal and the peritoneal cavity. From the latter, growths of the streptococcus pyogenes and colon bacillus were obtained; and from the cervix, the same together with the staphylococcus pyogenes albus. Cover-slip preparations gave the same results. No diphtheria bacilli were obtained. Three drams of chloroform were used, and the patient was on the table thirty minutes. In twelve hours the temperature was 102.4, and the pulse 116.

On the third day the temperature again rose to 103.2 and the pulse 130. On removing the vaginal dressings an abscess containing one and one-half drams of pus was discovered in the vaginal wall. After this was opened the patient progressed rapidly. On the fifth day the temperature was normal and the pulse remained below 100.

With the Fallopian tubes apparently normal, the infection of the peritoneum must have occurred by an extension from the cellulitis. Even though, as in this instance, the physician may be in attendance upon cases of diphtheria and the slough may bear the characteristic appearance of diphtheric exudate, bacteriologic investigation is necessary to determine its causation. The absence of shock and the rapid reaction is not due alone to the use of a large quantity of salt solution, but to the rapidity and the ease with which these conditions can be cared for by the vaginal method. There is no necessity for complete narcosis, and the limited amount of the anesthetic required minimizes the dangers of unfortunate results.

An examination of the pelvis six months after the operation reveals a very satisfactory state. The obliteration of the cul-de-sac has made the uterus somewhat immobile, but this can be largely overcome by massage and judicious use of tampons. The right broad ligament, together with the uterine adnexa of this side, are practically in a normal condition.

I have reported this particular case, 1, because of its gravity; 2, because of the happy results; 3, because of its gravity and the results obtained, the report may stimulate others to use the vaginal route in preference to the abdominal. I have not yet lost a case of puerperal sepsis where the septic foci were confined to the pelvis since my adoption of the vaginal method.

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DISCUSSION ON PAPERS OF DRS. ZINKE, PORTER, MORAN, FRY AND HUMISTON.

DR. PHILANDER A. HARRIS, Paterson, N. J.—There is no reason why anyone should differ essentially from the points brought out in these papers. When I and others of my age studied medicine, hospitals were regarded as death-traps, and for long afterward we looked askance at maternity hospitals; conditions have changed since then, and now a well-ordered hospital is the very safest place for a woman during her confinement, especially when any instrumental or manual aid is necessary. The question as to what extent women may be taken from their homes to the hospital is a matter for consideration. It has its ethical side.

Dr. Fry's statement that the uterus may get into a condition where it no longer takes up an infection, is very true. I believe the endometrium usually acquires this immune condition in a few days, and that the toxemias and other evidences and miscarriage is too often expectant. Indifference on the part of the practitioner or a desire to consider the case unimportant leads to a neglect of radical treatment. Again, in many cases, a let-alone policy is followed because the general practitioner, to whom a large share of this work falls, modestly considers himself unequal to the emergency. These cases come under his care so often in the course of his daily practice, it is his duty to familiarize himself with the method of treatment necessary.

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DISCUSSION ON PAPERS OF DRS. ZINKE, PORTER, MORAN, FRY AND HUMISTON.

Dr. Philander A. Harris, Paterson, N. J.—There is no reason why anyone should differ essentially from the points brought out in these *papers*. When I and others of my age studied *medicine*, hospitals were regarded as death-traps, and for long afterward we looked askance at maternity hospitals; conditions have changed since then, and now a well-ordered hospital is the very safest place for a woman during her confinement, especially *when* any instrumental or manual aid is necessary. The question as to what extent women may be taken from their homes to the hospital is a matter for consideration. It has its ethical side.

Dr. Fry's statement that the uterus *may get into* a condition where it no longer takes up an infection, is very true. I believe the endometrium usually acquires [illegible] une condition in a few days, and that the toxemias [illegible] dences of a continued infection are due to extensions from the primary infection to other parts. If, therefore, we employ a curette to field what Nature has already defertilized, or strong disinfectants, or anything which will destroy the vitality of the tissue, then we may have a local reinfection. The matter of curetting the uterus under these conditions is a very serious and important one, and I wish to endorse the work of Dr. Fry. I have worked mainly along the lines laid down by him, which we all ought to follow. In certain instances physicians who have asked me to see cases of puerperal fever with them, have looked rather disappointed when I have refused to curette the uterus. In regard to the vaginal section, I stand entirely with the last speaker, and also with many others here who follow the example of Pryor, of New York. I do not believe it does any harm. Vaginal section may reveal pus when the qualities of fluctuation or induration are absent.

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[*] Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Obstetrics and Diseases of Women, and approved for publication by the Executive Committee of the Section: Drs. A. H. Cordier, W. E. B. Davis and Henry P. Newman.

Dr. Miles F. Porter, Fort Wayne, Ind.—Puerperal infection is a term that covers a multitude of pathologic conditions, and we can not speak about its successful treatment until we first determine the form of infection we are endeavoring to treat. It occurs to me that the loose way in which we have been talking about vaginal versus abdominal section in puerperal infection, has led to a great deal of practice which is not of the best character. My own impression is in accord with the writer of the paper on the use and abuse of the curette in cases of puerperal infection of the endometrium. Vaginal section has a place if there is in the pelvis a localized accumulation of infectious material—a localized peritonitis. On the other hand, in the treatment of a case of progressive septicemia, whether puerperal or not, operations are seldom beneficial and usually harmful. There are so many things to say, that we might prolong the discussion indefinitely, but the point I want to make is that puerperal infection covers such a multitude of conditions that to speak of its treatment by any one method is irrational.

Dr. A. B. Cates, Minneapolis—I think that the profession does not appreciate the progress made by our surgeons in the use of the rubber gloves. For the last two years I have been using them in nearly all my cases of confinement, and have found that the lying-in period has been greatly improved. It is rare, indeed, for sepsis to occur. The vulva should also be carefully cleansed, and the patient must be instructed to keep her hands away from the external genital organs. This is especially important, as sepsis is frequently conveyed in that way. In a case of sepsis, treatment should be directed to the place from which absorption is taking place. Sepsis will frequently occur from absorption from the perineum or from a lacerated cervix. These are the most common foci of infection. If the infection extends, as it frequently does, we most commonly have an endometritis. If this occurs it is desirable to ascertain the character of the bacteria present. We have been told that the streptococcus should be let alone, that we are not to curette in a case of streptococcus infection. That is good advice. I think that the suggestion of Dr. Williams, of Johns Hopkins, is a good one, that if on examination of the interior of the uterus we find a smooth surface, it is a streptococcic infection; if it is a rough surface it is usually a mixed infection or a sapremia. If you have a sapremia there is no question but what you need the curette and intra-uterine douches. I believe that with proper precautions, we can not, as a rule, do very serious harm with intra-uterine douches in any case except a streptococcus infection.

The use of ergot has not been mentioned by any one in this connection. I think more stress ought to be laid upon the use of ergot in the earlier stages of the lying-in period. It not only tends to contract the uterus, but also to prevent absorption from the lymphatics.

Dr. W. O. Henry, Omaha, Neb.—I think we talk too much of ideal conditions. The large majority of women confined are absolutely outside of the reach of a prompt bacteriological examination. Theoretically, Dr. Fry's paper is all right, but practically it can not be followed at the present time by the large majority of practitioners. I fully endorse his investigation; but as in the majority of instances it is impossible to determine quickly the nature of the bacteria present, we ought to agree on a line of treatment that every man can use safely, readily and successfully. I am confident that the man who knows how to use the curette following abortions or normal labor with infection, can use it safely. He will never do any harm. It matters not what your infection is, nor whether it comes from the endometrium or a torn perineum or a lacerated cervix or a tear in the vagina; every raw surface should be absolutely and thoroughly cleansed with the curette. If you were to look inside the uterus following a labor, you would find there a large mass of lymphoid-like tissue which is gradually breaking down and which in part keeps up the flow following confinement. If infection has started there, the sooner you clean out that uterus and get rid of all this tissue the better it is for your patient. It has been my practice for several years to clean out the uterus thoroughly, clean off every raw surface in the vagina, cervix or vulva with a sharp curette; then I put on absolutely pure carbolic acid, after which a little alcohol can be used to counteract the acid. I do not use it as a routine practice, but it will do no harm. The acid is a mild caustic and kills every germ within reach. If you find a little fluctuation or infiltration back of the uterus, make a vaginal incision and drain. Sometimes you get pus and sometimes a bloody fluid. The vaginal section is preferable to opening the abdomen, which I believe is always wrong in acute cases and will cause you to lose a large portion of your patients.

Dr. Edwin Ricketts, Cincinnati—Much has been said as to the recognition of these germs after they have once caused the infection. I wish to say a few words on the line of prevention. I think since the appearance of the lady physicians among us, we have a great prophylactic factor which will do away with the midwife. When we, as a profession, recognize this fact and extend our aid to the recognized lady physicians, rather than extending it to the midwife, we are going to do a great amount of good in the prevention of many cases of sepsis. I recall an instance which occurred a short time ago in which a midwife was responsible for seven cases of infection, four of whom died. When we see how these cases are handled it is enough to cause consternation. You can read between the lines of every paper read on this subject this afternoon and it is against this thing of not being clean, and that in turn is against the midwife. I am in full accord with the statement made by Dr. Zinke that the birth of a child is a surgical procedure. Treat that uterus as you would a broken bone. The time is coming when the recently delivered uterus will be carefully packed with gauze and it will be one of the greatest steps toward dealing with such infection that we will have at our command.

Dr. C. A. Dannaker, Kansas City, Mo.—Modern civilization has produced an environment which does not help the work of the obstetrician. A great majority of people live in flats which are not conducive to carrying out proper aseptic precautions. A large number of people are not prepared by their environment to become mothers. The maternity hospital fills a long-felt want. The parturient can be taken care of there with less expense, better surroundings and better results than would obtain in the above surroundings. The maternity hospital is the safest place for this work.

In regard to the pathological germs, which the gentleman said mean so much, it is plain dirt. How many of us go to the bedside of a maternity case after washing our hands? Ask the nurse or attendant to bring a basin of water so that whenever we make an examination we can wash our hands. How many of you give an enema before labor begins so that the rectum is clean and so that you will not introduce anything into the vagina with your finger? How many of us are extravagant in the use of cotton beneath the vulva to catch the debris? So many of us think so little of these little things that make our patient comfortable.

As to the position of the mother, it is impossible in private families to bring the patient around to the side of the bed, except in instrumental interference. That can only be done in hospitals. We should think of all these things in time, as much depends on doing these little things right.

Dr. J. Wesley Bovee, Washington, D. C.—I notice that there was some applause following Dr. Henry's statement as to the use of carbolic acid. There is no question that there is this very zone present mentioned by the essayist which is outside of material that is dangerous. This material Dr. Henry would remove with the curette and so would the rest of us if we could get it out alone, but the danger is that we might get into the zone beyond and thus open up the avenues for infection. It is impossible to remove all of the pathological organisms with either the curette or carbolic acid. As soon as you put the acid in it is diluted and thus gives an opportunity for the development of those bacteria that are left. The bacteria have a good pabulum to work on and avenues for spreading in the surrounding tissues. You must also remember a number of cases on record of carbolic acid poisoning resulting from its application to the uterus, and many other cases of dangerous toxic symptoms which, however, recover.

I am not willing to introduce my hand into the vagina of a woman who has been delivered two or three days previously. I do not consider the danger of my hand, but the danger of not getting a thoroughly sterile vulva from which infection can easily be carried into the uterus. This applies to the gloved hand as well as to the bare one.

I do not know how the last speaker expects to get rid of the danger of infection by washing out the rectum. It is perfectly proper to have an empty rectum during delivery, but he must not imagine that he has escaped the danger of infection by cleaning it out. One point of great value is to keep applied to the vulva an antiseptic solution. In my practice a pledget of sterile cotton is soaked in lysol or bichlorid solution and placed against the vulva, the vulva being spread open when the cotton is put there. That is kept there all during labor until the head of the child throws it off. It is also kept on for a number of days after the delivery. This is of extreme importance because it tends to asepticize the vulva.

Dr. W. D. Porter, Cincinnati—The use of intra-uterine douches is a procedure universally recommended by all authorities. They specify, as do the papers we have just heard, that such a douche shall be hot. Some seven or eight years ago a writer in the *Philadelphia Medical Journal* said that the chill which occasionally follows the use of the hot douche was due to the fact that the heat had the effect of contracting the vessels and of diminishing the drainage for a short time. The chill is the direct result of this failure of elimination. Since reading that article I have never used a hot intra-uterine douche and no chills have followed. I think it is important that the temperature of the douche be no higher than the body temperature.

Dr. Moran, in closing—My paper should have been entitled the "Prophylaxis and the Treatment of Puerperal Sepsis." It has been the custom in the Columbia Hospital at Washington to invariably use rubber gloves. Whoever examines the patient, is required to use the gloves. We have been doing that for the last year.

The Egyptian Medical Congress will be held under the patronage of the Khedive at Cairo, from December 10 to 14, 1902, under the presidency of Dr. Abbate Pacha. The honorary presidents are Dr. Ibrahim Pacha Hassan, Dr. Pinching and Dr. Ruffer. The general secretary is Dr. Voronoff. The work of the Congress will be divided among three sections, as follows: 1, Medical sciences, presided over by Dr. Comanos Pacha; 2, Surgical Sciences, presided over by Dr. H. Milton; and 3, Ophthalmology, presided over by Dr. Mohammed Bey Eloui. The program of the Congress will include discussions on affections especially rife in Egypt, such as bilharzia, ankylostomiasis, bilious fever, abscess of the liver, etc. Special attention will be given to questions relative to the epidemics which for some years past have regularly visited Egypt, and the prophylactic measures to be taken against them.—*Brit. Med. Jour.*

REMARKS ON SPINAL SURGERY, WITH ILLUSTRATIVE CASES.*

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NEW YORK CITY.

(Concluded from p. 573.)

TUMORS.

Operations for spinal have generally been more satisfactory than those for cerebral tumors and offer better promise for future operative successes. There are good reasons for this. In cranial surgery the diagnosis, both as to the nature and location of the lesion, is less accurate; the lesion is often inaccessible to the surgeon and much permanent damage has often been done to the brain prior to the operation.

The symptoms of tumors of the cord are generally well marked and their location, at least within a certain limit, can be usually accurately determined. When studied with the history of the case the lancinating pains, the muscular paralyses and contractures, the altered reflexes, and the disturbances of sensation, lead us to a comparatively certain diagnosis and one is much less apt to meet with surprises than has been the case doubtless with most of us when operating for cerebral tumors. As already stated the location can generally be definitely determined. Uncertainty, however, always exists as regards the character of the growth and the structures involved.

Concerning the character of the lesion it is probable that tubercular masses, whether of bone or granulation tissue, are among the most frequent causes of pressure of the cord. In the present paper, however, this class of cases is not considered.

Of spinal tumors proper the most common are unfortunately those of malignant growth. The prognosis of these must of course always be bad, though not hopeless, as is shown by the permanent recovery of a patient from whose cord a sarcoma was removed by Davies Colley (Clin. Soc., London, 1892). Even if permanent cure can not be effected temporary relief for at least many months may be accomplished. As an example of this let me narrate the following cases, one of whom at the end of a year after operation is apparently perfectly well.

Case 11.—Sarcoma of upper Lumbar Cord; Removal; Recovery: E. K., male, aged 39, has good family history. For many years alcoholic. No venereal or traumatic history. In December, 1898, he noticed a lancinating pain shooting down the posterior part of his right thigh to the back of the knee. It was spasmodic in character. He was treated for sciatica. It continued intermittently; in July, 1899, he experienced pain in the sacral region, right buttock and posterior thigh. He went to the country, where he spent the summer and improved so much that he was able to remain at his work from October till January, 1900, when the pain became so severe that he was obliged to remain most of the day on the sofa. About this time he came to see me, complaining of what he termed sciatica, mainly on the left side. He also complained of pain in the lower lumbar region where there was also some tenderness to pressure, especially to the left. There appeared to be some stiffness in the lower part of the spine; there was no paralysis, no anesthesia; knee-jerks were normal. I suspected at the time pressure on the cord but was rather inclined to favor tubercular disease of the bone. He drifted away from my care. He was treated with a brace, mercurial inunctions, iodids, etc., without benefit. In fact his symptoms gradually progressed and after the end of April his pain became especially severe, extending down the posterior surface of the thighs and legs to the feet. About May 1 he noticed numbness, which extended over the area where later anesthesia (shown in the diagram) appeared on the posterior and outer surface of the left thigh, leg and foot. At the same time he noticed decided weakness of the left leg.

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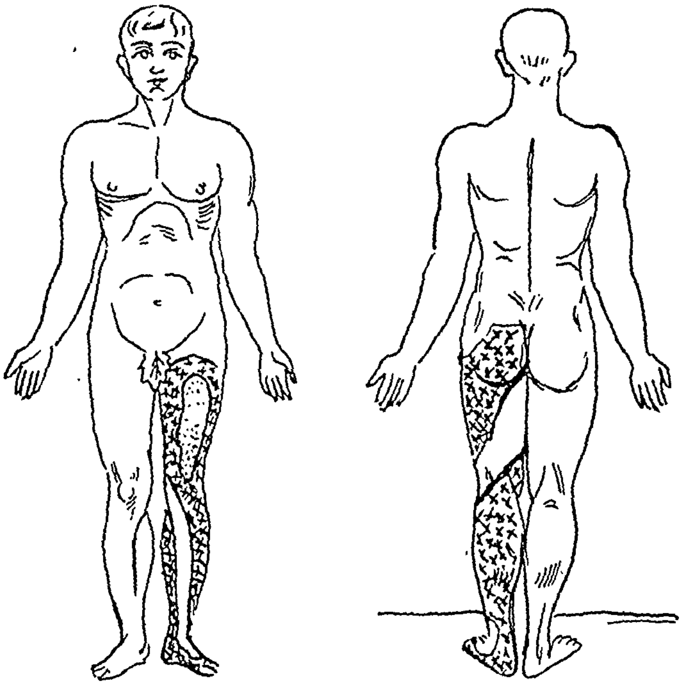
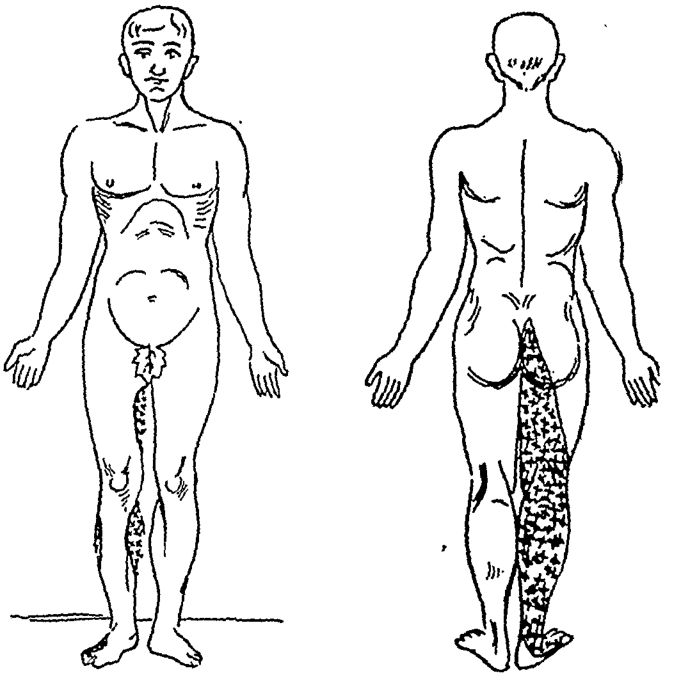
* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section: Drs. W. J. Mayo, H. O. Walker and A. J. Ochsner.

After consultation with Dr. Pease Bailey the diagnosis of tumor of the cord at the upper part of the cauda equina was made, and he was sent to the hospital on May 15 for operation. There was pain and tenderness along the lower spine; pressure at this point caused a burning sensation along the posterior and outer aspect of the left thigh and leg. There was partial paralysis of the muscles of the left thigh and leg with some atrophy, the left thigh measuring two inches less than the right. The left patella reflex was entirely absent. There was no ankle clonus; no priapism.

Operation May 22, 1900; gas and ether. An incision was made from the eleventh dorsal to the second lumbar spines; the spines and laminæ of the twelfth dorsal, first and second lumbar vertebræ were removed. Through the dura was seen a bluish substance. It was opened through the extent of the incision. No cord could be seen, but the canal seemed occupied by a bluish, watery, granulation-like mass which extended from the lower border of the twelfth dorsal vertebra to and somewhat below the upper border of the third lumbar vertebra. On pricking the tumor considerable greenish fluid escaped. At the upper part of the twelfth dorsal vertebra the normal cord was seen, and when followed downward was found displaced to the right and anterior part of the vertebral canal, where it was first exposed after removal of the tumor, which was done by a sharp spoon. The tumor, which was soft and vascular, extended well around the lateral surfaces of the cord. It was about two and a half inches in length, a half to two-thirds of an inch in thickness. All that was seen well around to the sides of the cord was carefully scraped away, as was also the bone. The hemorrhage was trifling. The dura was sutured, and also the wound. A small gauze drain being inserted. Shock was very slight and the patient made a perfect recovery from the operation. Previous to the operation for several weeks he had been using three to five grains of morphin daily, after the operation he required but one hypodermic of a quarter grain. His pain immediately ceased and on the day following he declared that he was more comfortable than he had been for months. He remained in the hospital for thirty days, during which time he gained 22 pounds. During this time he suffered no pain whatever; sensation gradually increased in the anesthetic area and when he left the hospital there was a slight knee-jerk in the right knee.



CASE 11.—Tumor. The small crossed lines represent partial, the dotted complete anesthesia.

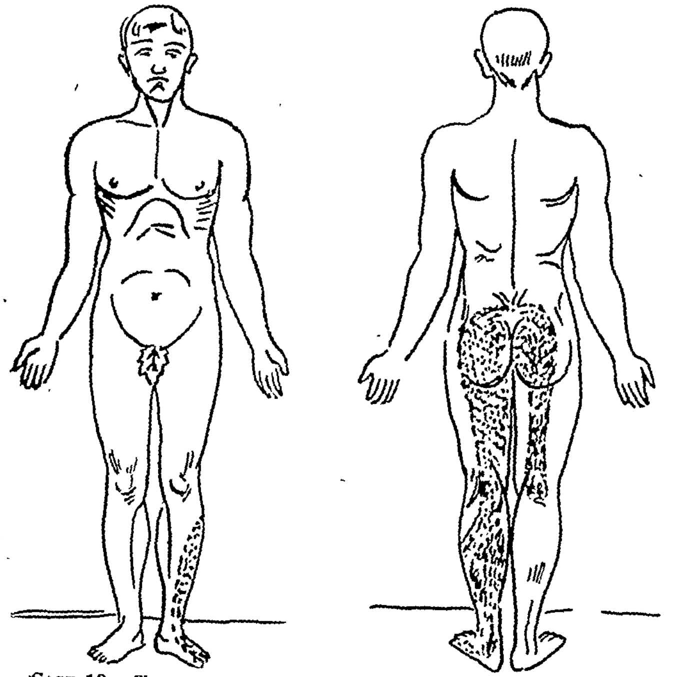


CASE 12.—Tumor. Small crosses indicate area of partial anesthesia to touch, pain and temperature. *Pain is also referred to this area.*

He continued to improve and on examination in September, 1900, sensation was found normal; the left patella reflex was completely restored; the left thigh measured but an inch and a half less than the right. He had gained 35 pounds in weight since the operation and said he was in perfect health. During the winter until May 25 he has remained at work lifting heavy printing plates weighing from 20 to 60 pounds from a table to a shelf above his head. He says that he experiences no stiffness or weakness in his back, and though he feels tired at night he feels well. While there is still a prospect of recurrence of the growth the man has been restored to perfect health and comfort for more than a year.

CASE 12.—Sarcoma of Lumbar Cord; Removal; Recovery; P. D., male, aged 46, had always been a healthy man of good habits, with no venereal or traumatic history. About Christmas, 1900, he began to feel some pain on the outer side of his ankles. About the middle of February he compained of considerable pain shooting down the posterior part of the right thigh and leg as far as the outer ankle. It increased rapidly, and by March 1 was so severe that he was obliged to give up work and go to bed. In the middle of March the pain began to shoot from the sacral region around towards the right groin, the glans penis, testicles and inner side of right thigh. He also had pain on defecation, and when his bladder was full. Micturition at times was difficult, and he was markedly constipated. He was brought to the hospital by ambulance on May 20, having fallen down in a severe paroxysm of pain. During a week's observation in the hospital, the pain, shooting from the sacral region across the right buttock and down the posterior surface of the right thigh and leg, was very severe. There was considerable loss of power in the right thigh and leg. He could not stand up, but thought this was partially due to his pain. There was an area of partial anesthesia, at times seemingly complete to both touch, temperature and pain along the right posterior thigh, leg, and over the outer side of the foot. On his buttock above and internal to this there was a narrow line of hyperesthesia. Both patella reflexes, but especially the right, were feeble. Jarring of the body did not cause pain, though it was somewhat increased on motion and there was some tenderness to pressure in the lower lumber region. In four weeks he had lost 30 pounds in weight.

After consultation with Dr. Northrup, the diagnosis was made of tumor probably malignant in the neighborhood of the third lumbar vertebra. Operation, May 28, 1901; gas and ether. An incision was made from the fifth to the first lumbar spines. The spines and laminæ of the second, third and fourth lumbar vertebræ were removed. There was seen lying on the dura a dark-red, purplish, vascular granulation-like mass, completely hiding the dura except at the upper and lower extremities of the wound. The tumor somewhat irregular, about two and a half inches in length, was spread out more than half way around the cord. It varied in thickness between a quarter and a half an inch. It was removed by a sharp spoon, and in order to reach its lateral projections the cord (cauda equina) was raised from its bed and almost lifted out of the canal. The tumor was apparently removed, but doubtless it was not thoroughly eradicated. It extended from the upper border of the fifth lumbar vertebra as high as the middle of the second lumbar vertebra. In its removal the dura was freely opened and in part removed. The nerves forming the cauda equina were considerably contused and somewhat lacerated. The dura could not be closed. The wound was sutured, with the exception of the gauze drain.



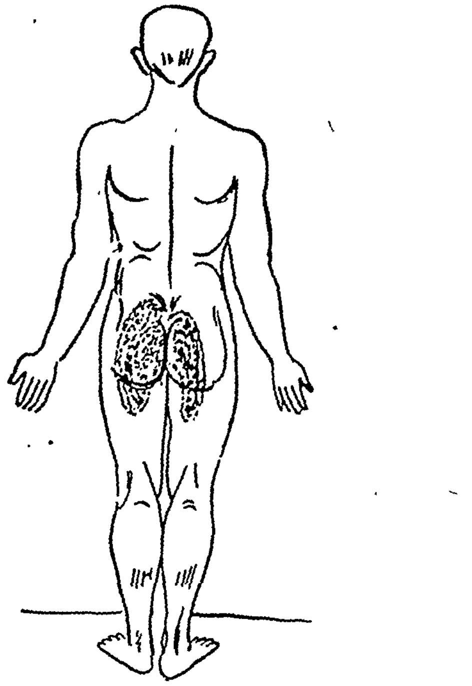
Case 13.—Tumor. Area of partial anesthesia to heat, Nov. 10, four days before operation.

Very slight shock followed the operation. The man suffered no pain, in fact when he recovered from the anesthetic he declared he was more comfortable than he had been for three months. There were no muscular twitchings and no increase in his paralyses.

The gauze drain was removed at the end of thirty-six hours. A considerable amount of cerebrospinal fluid continued to escape from the wound for four weeks, and then gradually ceased. The anesthetic area remained unchanged for five days, when slight improvement was noticed, which has continued.

Case 13.—Sarcoma involving Cord, Bone, and Muscles in Lumbar Region; Operation; Temporary Improvement, followed by Death: H. M., female, married, aged 30, is mother of four children. No venereal or traumatic history. Moderate drinker but always enjoyed good health. About the middle of September patient began to experience in the left foot and leg the sensation of pins and needles being stuck into the skin. This was most felt on the outer surface of the leg just above the ankle. It caused the patient considerable pain; during the next two weeks these sensations gradually extended upwards toward the trunk. The parts affected felt numb, less discomfort was felt when walking, than when at rest. About the middle of October the pain became less severe but the patient found she had lost the power to use her left lower extremity in walking or standing. At this time she still had control of her bladder and rectum.

On October 22 she was admitted to the medical side of the hospital; her general condition was then good; there was partial paralysis of the left leg, causing marked drop-foot. The patella reflex on the left side was completely lost, on the right markedly diminished. Sensation was normal to pain and touch. Several large blebs were present on the left foot. The circumference of the left leg was four inches smaller than that of the right. There was a beginning bed-sore over the sacrum. The symptoms rapidly increased, she soon lost control of bladder and rectum. In two weeks the paralysis had spread to the anterior tibial muscles of the right leg, and a saddle-shaped area of anesthesia developed in the lower extremities as far as the foot on the left side and the lower third of the thigh on the right. The paralysis of the right side continued to increase and the patient began to complain of very severe pain in the small of the back, and along the hips down into the thighs. The temperature was normal and the pulse ranged between 90 and 110. The urine contained albumin, casts, and some pus. In the meantime, on the supposition that the lesion might be syphilitic, iodid of potash was administered in increasing doses.



Case 13.—Tumor. Area of partial anesthesia to heat, Nov. 26, sixteen days after operation.

The diagnosis was made of tumor, probably malignant, in the neighborhood of the second and third lumbar vertebræ. The patient was transferred to the surgical side for operation on November 13, 1900; chloroform. An incision was made from the first to the fourth lumbar spines. The muscles next the bone were found infiltrated with a spongy, very vascular growth, which infiltration was afterwards found to spread laterally for a considerable distance. The spines and laminæ of the second and third vertebræ, and probably a fourth, were more or less disintegrated and were infiltrated with the same spongy, friable, very vascular growth. Considerable masses of bone were removed, as also of the soft parts, in hopes that the pain would thus be somewhat relieved. Radical operation was out of the question and the cord which could not be distinctly recognized was infiltrated by the same new growth, as was also probably the vertebral bodies. The bleeding was severe, but was controlled by pressure. Shock was severe, but she soon rallied.

Marked improvement followed the operation. Her pain practically ceased; there was some return of sensation and to our surprise the wound healed kindly. On January 1 the patient was comparatively comfortable and was able to sit up part of the day in a chair.

The bed-sores did not heal. During February, however, all progress ceased; the patient began to grow weaker; she began to suffer pain; the paralysis increased and in March a tumor developed in the epigastric region. She gradually grew weaker and died on April 10, 1901.

In regard to the structures involved, whether the tumor arises from bone, membrane or cord, it is often impossible to determine. The bony tumor will generally be malignant or tubercular in character. In either case while an operation may not be able to remove the growth it may enable the operator to relieve, at least for a time, the pains, which are apt to be agonizing. This may be accomplished by division of appropriate nerve roots. To be of any service three roots must be divided, as the anastomosis between the sensory nerves is so perfect that the division of one or two nerve roots is practically useless for abrogation of pain.

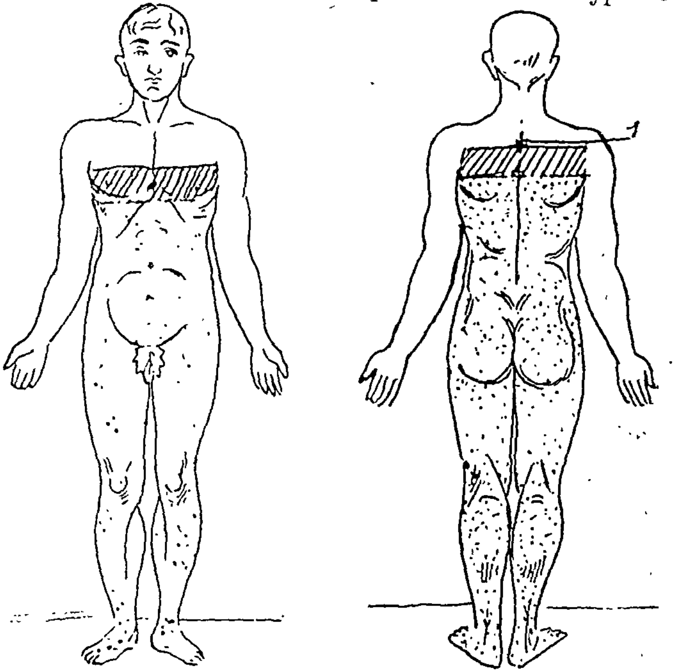
As regards the situation of the tumor relative to the cord, it may be stated that no case has yet been reported where recovery has followed the removal of an intramedullary tumor; neither has a tumor been successfully removed from the ventral side of the cord. It seems to be the rule that the higher up in the cord the tumor be situated the worse becomes the prognosis.

Provided a tumor of the cord is diagnosed, what is the surgeon's duty? Is he to operate at once on every case? Is he to wait for confirmatory symptoms, such as signs of degenerations or extension of paralyses? In regard to the first question the same principles should rule him as would were there any other organ concerned. He should ask: 1. Can the tumor be removed? 2. If irremovable can the patient be relieved by palliative operation? 3. What are the dangers of the operation? 4. What are the chances of permanent recovery? The nature of the growth—the structures involved and the damage already done to the cord are problems which as yet we are generally unable to solve, at least with certainty. Knowledge concerning the danger of operation is, however, more definite. While many cases have died as the direct result of operation and in others death has been hastened, the dangers at the present day should not be great. Certainly, a mortality directly due to operation should not be more than 10 per cent. Many of the reported cases where death followed within a week or ten days, were done years ago, when our methods were less perfect than they are to-day. Sepsis was the principal cause of death. At the present time we certainly would not expect this to occur in more than 1 or 2 per cent. of our operations. Death from shock or hemorrhage should result but rarely, certainly in not more than 5 per cent. of our cases.

Provided there is reasonable probability of the existence of a spinal tumor, and unless there be positive evidences that cure or relief is impossible, I would urge operation on every case at the very earliest possible moment. If it be postponed the chances of benefit become less with every day's delay. If no operation be done the outlook is hopeless. The result will be progressive pain, weakness and death.

Lloyd has collected 51 cases of operation for tumors of the cord, with a mortality of about 10 per cent.; 31 per cent. of these cases recovered. My own operations number 6. Of these none died as the result of operation. One patient at the end of more than a year is well; another at the end of two months. Two died from sarcoma of other organs. One died at the end of two months from sepsis due to bed-sores and cystitis.[2]

The possibility that the tumor is syphilitic, in the nature of a gumma, unfortunately, must be considered. I say "unfortunately," for the delay caused by this possibility has been responsible for the loss of many lives. It is rarely that a case of spinal tumor is not subjected to this treatment, which involves a delay of many weeks. Of the tumor cases which I have seen, with one exception, every patient has been subjected to antisyphilitic treatment. In one of my cases at least this treatment, or rather the delay, necessary for its test was largely responsible for the patient's death and I feel sure that most of you will recall similar cases. If a patient gives a syphilitic history it is certainly proper that the specifics should be tried for a reasonable time, but when no such history is given it seems to me most undesirable to soak the patient with mercury and iodid, and in the mean time allow bed-sores and other complications to develop, which render operative interference almost hopeless. If pressure due to syphilis were common there might be some excuse for trying to relieve it by medication, but as gummata sufficient to produce the symptoms of pressure resembling those of tumor are very rare, it seems to me that it is generally wiser and safer practice, where there is lack of evidence of syphilis, to give the patient the benefits of an operation. Death which resulted in the following case may largely be attributed to such delay.



Case 14.—Oblique lines indicate band of partial anesthesia. Dotted parts indicate area of complete anesthesia to touch, pain and temperature.

Case 14.—Fibroma of lower Cervical Cord; Operation; Removal; Operative Recovery; Death in 43 days: Mrs. W., aged 37, had been a comparatively well woman until January, 1900, when she began to complain of some obscure abdominal pain. There was no history of syphilis or traumatism. In March or April, 1900, she began to complain of severe neuralgic pain, shooting around the chest just below the left breast. Soon after this she noticed numbness of her left leg and there was slight increase of both patellar reflexes. In the summer of 1900, her lower extremities became more or less paralyzed, and in August she began to lose control over her bladder and rectum. In September the paralyses in her legs became complete. The patellar reflexes became more exaggerated and any irritation to her body produced violent muscular spasms in her lower extremities. The neuralgic pain around the left side of the chest became very severe. Anesthesia of the body as high as a line drawn at the fifth or sixth dorsal nerve became complete.

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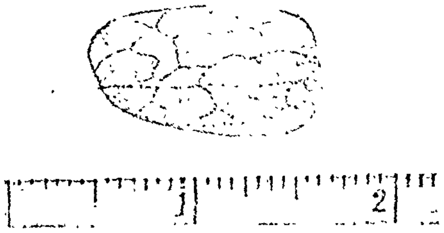
[2] One, Case 1, reported as lipoma, should probably not be considered in this connection.

The patient was treated for weeks and months with mercury and iodid of potash. Her symptoms during the summer varied somewhat, being for weeks at a time of milder type, but in the autumn they became rapidly worse. In the meantime, due to the delay necessitated by the employment of antisyphilitic treatment, a foul bed-sore developed over the left hip.

The patient was sent to me for operation by Dr. M. A. Starr, with the diagnosis of tumor of the cord in the region of its fourth dorsal segment.

Operation Oct. 20, 1900. Chloroform. A 5-inch incision was made from the second to the sixth dorsal spine. The spines and laminæ of the second, third, fourth and fifth dorsal vertebræ were removed. A moderate layer of fat covered the dura. It was slightly purplish in color. It was opened for a distance of four inches. The pia seemed congested and bulged outward



Case 8. Tumor compressing spinal cord Actual size

develop evening temperature, and for weeks until her death her temperature ran a septic course due to absorption from the bed-sores. The pain in the neck and chest was so severe that anodynes were necessary. Her stomach became very irritable and it was with difficulty that she could be fed. Towards the beginning of December she began to have periods of delirium and semi-consciousness and she gradually failed and died on Dec. 3, 1900.

The wound remained clean throughout the course of her illness, but there was an entire absence of any sign at repair, its edges being kept together by silk sutures and adhesive plaster. On microscopic examination, the tumor proved to be fibroma, though it contained some cells suspicious of sarcoma.

It is, of course, of the utmost importance that the lesion be located before operation. One can not ruthlessly sacrifice spinous processes and laminæ, and a large flap is not practicable as it is in operations on the brain. The location within certain definite bounds can almost invariably be settled. It is impossible, on account of the anatomic arrangements, to assign a certain lesion to any one segment of the cord, but it is almost always possible to locate a lesion to an area embraced by three spinal segments. The reason for this is evident. There is no spot on the surface of the body and practically no muscle (with the possible exception of some of the deep small muscles of the back) which is innervated

tissue it is sometimes difficult to distinguish between them. Likewise, in the dorsal and lumbar regions similar difficulties at times present themselves. Of course, in the former the ribs can generally be taken as a guide for locating the different spines, but, again, in stout people with strongly developed muscles this is not always easy.

Before considering the technique of the operation it may be well to make a few general suggestions in regard to spinal surgery.

1. The incision should be made as high up as possible. The main reason for this is that the nutrition of the

all progress ceased; the patient began to grow weaker; she began to suffer pain; the paralysis increased and in March a tumor developed in the epigastric region. She gradually grew weaker and died on April 10, 1901.

In regard to the structures involved, whether the tumor arises from bone, membrane or cord, it is often impossible to determine. The bony tumor will generally be malignant or tubercular in character. In either case while an operation may not be able to remove the growth it may enable the operator to relieve, at least for a time, the pains, which are apt to be agonizing. This may be accomplished by division of appropriate nerve roots. To be of any service three roots must be divided, as the anastomosis between the sensory nerves is

The possibility that the tumor is syphilitic, in the nature of a gumma, unfortunately, must be considered. I say "unfortunately," for the delay caused by this possibility has been responsible for the loss of many lives. It is rarely that a case of spinal tumor is not subjected to this treatment, which involves a delay of many weeks. Of the tumor cases which I have seen, with one exception, every patient has been subjected to antisyphilitic treatment. In one of my cases at least this treatment, or rather the delay, necessary for its test was largely responsible for the patient's death and I feel sure that most of you will recall similar cases. If a patient gives a syphilitic history it is certainly proper that the specifics should be tried for a reasonable

progressive pain, weakness and death.

Lloyd has collected 51 cases of operation for tumors of the cord, with a mortality of about 10 per cent.; 31 per cent. of these cases recovered. My own operations number 6. Of these none died as the result of operation. One patient at the end of more than a year is well; another at the end of two months. Two died from sarcoma of other organs. One died at the end of two months from sepsis due to bed-sores and cystitis.[2]

April, 1900, she began to complain of severe neuralgic pain, shooting around the chest just below the left breast. Soon after this she noticed numbness of her left leg and there was slight increase of both patellar reflexes. In the summer of 1900, her lower extremities became more or less paralyzed, and in August she began to lose control over her bladder and rectum. In September the paralyses in her legs became complete. The patellar reflexes became more exaggerated and any irritation to her body produced violent muscular spasms in her lower extremities. The neuralgic pain around the left side of the chest became very severe. Anesthesia of the body as high as a line drawn at the fifth or sixth dorsal nerve became complete.

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Operation Oct. 20, 1900. Chloroform. A 5-inch incision was made from the second to the sixth dorsal spine. The spines and laminæ of the second, third, fourth and fifth dorsal vertebræ were removed. A moderate layer of fat covered the dura. It was slightly purplish in color. It was opened for a distance of four inches. The pia seemed congested and bulged outward, caused by the excess of cerebrospinal fluid. It was punctured and an ounce or more of fluid escaped. The cord looked somewhat atrophied, but otherwise normal. The third and fourth posterior roots were picked up with a blunt hook and divided. A director, passed both inside and outside the dura upward and downward for two inches, met with no obstruction. The dura was sutured with catgut; the muscles and skin with catgut and silk.

Very little reaction followed the operation. For forty-eight hours there was some increase in the muscular spasms and some decrease in the pain across the chest. It was evident, however, that the lesion had not been found and judging from past experience we concluded that the tumor was situated at a higher point; and accordingly on October 23 the second operation was performed. An incision was made from the first dorsal or upper termination of the former wound to the fifth cervical spine. In the original wound there had been no attempt made at repair. It was perfectly clean, but there was no agglutination whatever of the skin or muscular edges. The spines and laminæ of the first dorsal, seventh and sixth cervical vertebræ were removed. Towards the upper end of the incision the dura for a space of two inches looked rougher and redder than normal and to it the ligaments had been slightly adherent. Superior to this point there was marked pulsation of the dura. It was opened through the whole length of the incision three to four inches, and at a point opposite the lower three-fourths of the seventh cervical vertebræ, the interspace below and the upper part of the first dorsal was seen a mass somewhat sausage-shaped, resting under the pia about an inch and a quarter in length, two-thirds of an inch in breadth, and half an inch in depth. Its color was pearly gray, slightly pinkish. The cord under it was practically concealed by the tumor, to which it was connected by a thin layer of connective tissue. It was completely encapsulated and was easily lifted from the cord by division of a thin fascia and removed entire. (At the former operation the opening of the dura had extended to within three-quarters of an inch of the lower end of the tumor. The dura was sutured with catgut and the wound closed.)

See colored plate, marked Case 8.

The operation was followed by comparatively little shock. For some days she complained much of pain in the wound and excessive hyperesthesia across the upper part of the chest extending a little above the clavicles. The muscular spasms soon ceased and she complained of no contraction or pain, except in the upper part of the chest and back of her neck. The bed-sores on her hips slowly increased in size and their base consisted of a sluggish, foul, sloughing area.

In a few weeks she began to develop evening temperature, and for weeks until her death her temperature ran a septic course due to absorption from the bed-sores. The pain in the neck and chest was so severe that anodynes were necessary. Her stomach became very irritable and it was with difficulty that she could be fed. Towards the beginning of December she began to have periods of delirium and semi-consciousness and she gradually failed and died on Dec. 3, 1900.

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It is, of course, of the utmost importance that the lesion be located before operation. One can not ruthlessly sacrifice spinous processes and laminæ, and a large flap is not practicable as it is in operations on the brain. The location within certain definite bounds can almost invariably be settled. It is impossible, on account of the anatomic arrangements, to assign a certain lesion to any one segment of the cord, but it is almost always possible to locate a lesion to an area embraced by three spinal segments. The reason for this is evident. There is no spot on the surface of the body and practically no muscle (with the possible exception of some of the deep small muscles of the back) which is innervated by one nerve root alone. The anastomosis between the sensory nerves is so perfect that every spot of skin derives its sensation from at least three or more nerve roots or segments, and every muscle derives its motor power from at least two segments of the cord.

In addition to this it is known that the afferent and efferent tracts run up in the substance of the cord for a considerable and according to location a variable distance, that degeneration will at times follow up these tracts for a considerable distance, perhaps two segments, before it reaches the real nerve center in the gray matter of the cord. As a consequence the cause of a paralysis or irritation of a muscle or of an area of anesthesia may, instead of being at the segment into which the nerve root supplying said muscle or spot of skin enters, be located at a point a considerable distance higher up in the cord.

This is one of the reasons why in many of the operations for lesions in the cord the spot selected as its site has been found to be considerably lower than the spot where the lesion is found at operations to exist. On this account more than one operation has been fruitless. Case No. 10 is a good illustration of this. The symptoms were most misleading and reliance was placed on published rules and tables and the lesion not found at operation. Fortunately the result was not affected by this failure.

A difficulty which not infrequently presents itself in these operations is the determination of the exact position of the different spinous processes. This is especially true as regards the cervical region, and in short-necked, fat females it is often difficult, sometimes impossible, to accurately locate the different spines. Errors because of this uncertainty have more than once been made, and I know of no rule whereby in certain cases various spines can be definitely located. In the cervical region it is, of course, easy to say, find the seventh or vertebral prominence and count upward. This is certainly easier than to count downward, beginning with the axis or atlas. But it is not always easy to determine which is the seventh spine. The sixth cervical as well as the first dorsal spines are often almost as prominent, and in a neck covered by adipose tissue it is sometimes difficult to distinguish between them. Likewise, in the dorsal and lumbar regions similar difficulties at times present themselves. Of course, in the former the ribs can generally be taken as a guide for locating the different spines, but, again, in stout people with strongly developed muscles this is not always easy.

Before considering the technique of the operation it may be well to make a few general suggestions in regard to spinal surgery.

1. The incision should be made as high up as possible. The main reason for this is that the nutrition of the

soft parts below the seat of lesion may be impaired because of destruction of the nutritive cells in the cord. Another reason of less moment is that the lesion has generally been found above rather than below its point of location.

2. The operation should be done rapidly. But few vessels need the application of artery clamps and still fewer of ligatures. If a bold incision be made the bleeding will not be great and can be controlled by the use of gauze pads held down by broad retractors. At times it may be necessary to pack one side or end of the wound with sponges and while these remain for a minute or two the operator can work at some other part of the wound. In my recent operations I have employed but very few artery forceps and often not a single ligature.

3. Ample space should be afforded for proper examination of the cord. For this purpose the removal of at least three laminæ is generally necessary. Of course, in cases of fracture, bullet or stab wounds of the cord the removal of one or two laminæ may suffice; but at least in cases of tumor one should be careful not to be hampered by too small an opening.

4. Support after operation of the spinal column by means of braces or plaster-of-paris jackets has not seemed to me necessary; indeed, it seems to me it adds only to the discomfort of the patient. An experience of nearly twenty laminectomies has convinced me that it is generally useless.

There are two methods of operation for exposure of the spinal cord:

1. By means of a vertical incision through the skin down to the tips of the spinous process and then division and separation of the muscles attached to these until the posterior arch of the vertebral column is well exposed. The spines and laminæ are then removed by bone forceps and no effort made to save the fragments for replacement at the close of the operation.

2. By means of an osteoplastic flap consisting of skin, muscle, and the posterior arches of the vertebra, the flap if single remaining attached by a hinge situated at one or the other side or end, or if double the hinge being in the middle. The advantages of the first method are greater rapidity, less hemorrhage, and better access to the cord. Its disadvantage is that because of removal of bone there must be left a gap in the posterior arch of the spinal column. I do not place much value on this objection, as in the majority of cases no special weakness of the back results.

The advantage of the second method is that the bony flap is replaced and consequently the posterior bony arch is completely restored. Its disadvantages are that the operation takes more time, more blood is apt to be lost, access to the cord is less satisfactory and there is a liability that the nerve roots may be irritated by resulting callus or imperfect adaptation of the bony surfaces.

My own preference is for the first method. Subperiosteal removal of the posterior arches is theoretically desirable, but practically it is very unsatisfactory. It is, however, desirable to retain attached to the muscles as much periosteum, ligament, and tendon as is possible.

In regard to the instruments most suitable for laminectomy each surgeon will probably have his own preference; mine is for bone forceps, and I know of none better than the old-fashioned rongeur forceps of Luër. The handles, however, should be made a *little* longer. Many other ingenious and equally useful forceps have been devised for this purpose. Saws, both hand and electrical, are employed by some operators and it is claimed that the removal of bone can thus be accomplished more rapidly. I have not found this to be the case with hand saws, and the use of electrical saws for this purpose has always seemed to me dangerous.

In my own operations a median incision five to seven inches long is made directly down on the tips of the spinous processes; the muscles and tendons on each side of these are divided by knife or scissors until the laminæ are exposed. From these the muscles are rapidly stripped, the bleeding being mainly controlled and the sides of the wound retracted by broad retractors, under which are held pads of gauze or sponges. The spinous processes are then divided at their base by heavy bone forceps. The laminæ well out toward the pedicles are then gnawed off by means of Luër ronguer forceps. Sufficient bone is removed to give a good exposure of the cord covered by its dura.

If the lesion for which the operation be done is not then seen the dura is opened and the cord with its nerve roots thoroughly explored. With proper precautions the increase of risk due to the opening of the dura should be only slight. If a tumor be found, its removal will depend on its character and situation. If benign, it will be easily enucleated without hemorrhage. If malignant, hemorrhage may be severe if the growth has infiltrated into adjacent structures.

CONCLUSIONS.

1. The risk of the operation of laminectomy is slight.

2. Early operation is of the greatest importance. Operate before the onset of degenerate changes.

3. In tumor cases do not waste time with anti-syphilitic treatment.

4. Operate rapidly. Employ but few artery forceps or ligatures.

5. Support of the spinal column after operation is generally unnecessary.

LAMINECTOMIES FOR FRACTURES AND DISLOCATIONS.

No.	Name and Age.	Date.	Time after Injury.	Lesion.	Results.
1	E. G., 33	June 4, 1890	8 months.	Pachymeningitis, old fracture, 4th cervical vert.	Recovery.
2	G. A., 65	July 13, '90	12 hours.	Fracture, 3d cervical.	Death in 12 hours.
3	J. H., 42	June 27, '91	7 days.	Fracture, 10th dorsal.	Death in 66 days; sepsis due to bedsores and cystitis
4	J. T., 27	July 3, 1891	9 hours.	Fracture, 6th dorsal.	Recovery.
5	T. C., 41	June 1, 1892	6 hours.	Fracture, 7th cervical.	Death in 10 hours.
6	M. M., 35	Oct. 5, 1901	8 days.	Dislocation between 4th and 5th cervical.	Death in 12 days.

LAMINECTOMIES FOR TUMORS OF THE CORD.

No.	Name and Age.	Date.	Duration, months.	Location.	Lesion.	Results
1	E. R., 50	March 29, 1894	5	7th and 8th dorsal.	* See note.	Death in 15 months from tuberculosis.
2	M. H., 42	March 6, 1894	11	5th dorsal.	Sarcoma..	Death in 18 days due to sarcoma lung, pleurisy.
3	E. K., 39	May 22, 1900	28	2d lumbar.	Sarcoma...	At end of 13 months patient well.
4	Mrs. W. 37	Oct. 20, 1900	10	7th cervical.	Fibroma.	Death in 43 days; sepsis due to bedsores.
5	H. M., 30	Nov. 13, 1900	2	2d, 3d, & 4th lumbar.	Sarcoma...	Death in 5 months; exhaustion.
6	P. D., 46	May 28, 1901	5	2d lumbar.	Sarcoma...	Recovery.

* Reported in Am. Journ. Med. Sc., June, 1895, incorrectly as lipoma of 10th dorsal. Future history of case showed it to be tubercular disease of the 7th and 8th dorsal.

SPINA BIFIDA OR HYDRORRHACHITIS.*

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Spina bifida or hydrorrhachitis is a congenital malformation consisting of a cleft in the vertebral column with protrusion of the lining membranes of the spinal cord.

This deformity is caused by an arrest of ossification of the vertebral arches, and is situated in any region of the vertebral column. It is more frequently found in the lumbar region, which constitutes about 50 per cent. of all cases; there are probably about 12 per cent. in the lumbo-sacral region, and about 25 per cent. in the sacral region. It is frequently associated with other congenital deformities, such as hydrocephalus, talipes, harelip, etc.

It consists of a tumor, varying in size from a marble to an adult's head, and occupies the central portion of the canal over the posterior aspect of the vertebral column, and is intimately connected with the canal in which a gap is felt in the bones of the vertebra upon raising the tumor. The tumor is elastic, smooth and fluctuating, and in some instances wholly translucent; in other cases it is covered by integument, which may be normal in character, but more often the skin is thin, covering the base and sides of the tumor, or finally emerging into the transparent membranes, which forms the apex of the growth. In some cases the tumor is peduncular, in others sessile.

In this malformation there may be entire division of the vertebræ, involving even the bodies, with partial or complete absence of the lateral arches; or there may be perfect development of the lateral arches with the want of union at the median line. This protrusion generally takes place during the latter months of the fetal life; it may, however, be unobserved until some weeks or months after birth.

At present there are recognized three distinct varieties of this affection: 1, meningocele, the protrusion consisting only of fluid held in the membranes of the spinal cord; 2, meningo-myelocele, where we have the addition of a portion of the cord in the sac; and 3, syringo-myelocele, the central canal of the spinal cord being dilated, thus forming the cavity of the sac.

This is, as we are all aware, a very fatal affection, few children surviving longer than five or six months after birth, many dying before that time. Death usually occurs from convulsions, or ulceration and rupture of the sac. If the sac is ruptured during parturition, the infant is nearly always stillborn; and if it becomes open after birth, death usually follows in a few hours, the immediate cause of death being convulsions from the pressure being taken off the brain in consequence of the loss of the cerebrospinal fluid.

In the diagnosis of this affection there are some very important facts which should be borne in mind. The tumor is congenital and occupies the central portion of the posterior aspect of the spine. By pressure it is diminished in size, tension being easily seen at the fontanelle. By raising the tumor we are often enabled to discover the loss of the spinal arches and map out the bony margins of the spinal bodies; and when the child cries or coughs the tumor becomes more tense.

On account of the very fatal termination in the majority of these cases it can be readily recognized that the surgeon is warranted in pursuing any treatment which promises a prolongation of life or a radical cure. This treatment we can readily divide into palliative and radical. In the palliative treatment, when the tumor is small, or of moderate size, considerable pressure should be exerted upon it, either by the application of collodion, or a cup-shaped truss either made of surgeon's wool or some soft material, this pressure being maintained by a common roller bandage or adhesive strips. This treatment is suggested by a few accidental cures which have resulted by pressure being exerted by binders, which have been inadvertently placed tightly around the child's body, and in this way compressing the tumor. Some surgeons supplement this treatment by acupuncture, their method being by repeatedly pricking the thin portion of the cyst wall with a fine needle, allowing the fluid to ooze away upon an aseptic dressing; another method, following a similar course, is by tapping the cyst with a fine trocar and cannula, one or two drams of the fluid being drawn off at each tapping, gentle pressure being maintained either by pads of wool or cotton or the application of collodion.

In 1848, Dr. Brainard reported a number of successful cures by the injection of iodin into the cyst. The rules laid down by him are: 1, to make a puncture subcutaneously in the sound skin by the side of the tumor; 2, to draw off no more fluid than the quantity of fluid to be injected; 3, to evacuate the contents of the sac and, if symptoms of irritation supervene, to replace this fluid immediately with distilled water. The solution he generally used was iodin and iodid of potassium in the proportion of one-quarter grain of the former and three times the quantity of the latter to one ounce of distilled water. Morton's fluid has been lately employed more or less with success, and consists of 10 gr. of iodin, 30 gr. iodid of potassium to 1 oz. of glycerin. Two drams of the fluid are generally drawn from the cyst walls and replaced by the same quantity of this injection. These injections are repeated at intervals of from one to three weeks, so long as inflammation continues.

The radical operation consists in the excision of the sac. Dr. Bayer has reviewed the whole subject of spina bifida, and has discarded the treatment by acupuncture, seton, or trocar, and he condemns the injection of iodin or other irritants into the sac, and considers this condition to be one analogous to hernia, and suggests that the treatment of this affection should be maintained upon the same lines. He points out the danger of meningitis following this plan of treatment is no greater than that of peritonitis following the treatment of hernia, and as compared with the operation for hernia is both safer and more certain of success.

It does seem to me, from the statistics gathered from the treatment by tapping followed by the injection plan, the results of which have been most unfortunate, we are warranted, especially in this aseptic age of surgery, to treat this affection after the suggestion of Bayer; especially when the tumor is small and peduncular. Some very brilliant results have followed this plan of treatment. The outlines of the operation are as follows: An incision is made through the skin on each side of the tumor about an inch from its base and two flaps are carefully dissected off the tumor, the sac is then punctured, withdrawing the fluid, and the sac so cut and separated as to leave two flaps, one longer than the other. Should the nerves or portions of the cord be found adherent to the sac, they are carefully separated from the wall of the cyst and returned to the spinal canal. These flaps are now sutured, the approximation being so close that leakage will be impossible; the skin flaps are now brought together by silk or silkworm gut sutures, and should there be a deficiency of skin for covering, sufficient amount can be obtained by dissecting the skin from the loin and transplanting it.

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* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section: Drs. W. J. Mayo, H. O. Walker and A. J. Ochsner.

In looking over the literature on the subject of operation by extirpation, I found among some of the rules laid down the following: Extirpation is unjustifiable in very young infants; in cases complicated by extreme hydrocephalus, paraplegia, or serious nerve lesion; and again, where also the disease is very extensive and the want of a normal amount of integument is inadequate for covering the outside of the cleft. The indications advised for such an operation are as follows: Where the child is over 7 or 8 years old, and where the tumor is rapid in its growth, rupture threatened, and where normal skin is abundant for covering.

In consulting the authors on this subject, I am also impressed with the fact that the great majority of them are united in condemning the ligation of the sac. I therefore desire in this connection to report the following very interesting case:

On March 5 I received a communication from a local physician, stating that he had under his observation a baby of tender days, who had a fatty tumor upon the back, and which had a nevus developed upon its most salient point. The tumor, he also stated, had been growing quite rapidly in the past three weeks, and he was exceedingly anxious to know what course to pursue. I advised him to bring the child to Nashville for an examination, which he accordingly did on the evening of March 18. On the next morning, in conjunction with Dr. W. A. Bryan, I called upon the family and made a very careful examination of the baby. I found a tumor between the scapulæ, situated in the median line of the spine, about the size of an orange, translucent for about three-fourths of its diameter, globular in shape and pedunculated.

The base of the tumor was covered by normal integument. My examination also disclosed a cleft in the spine corresponding to the fifth dorsal vertebra, and I was enabled to discern the absence of the lamina and the connection of the tumor with the central spinal canal. The head of the child was drawn backward, and was apparently too large for the size of his body; there was, however, no bulging of the fontanelles, their closure being about normal for this period of life.

The following history was obtained from the mother: The family history on both sides was excellent, with not a single trace of deformity in any other member of the family, both lines having arrived at an advanced age of life. The child was born on Dec. 27, 1900, and weighed 5 pounds at his birth. Shortly after birth the mother noticed a tumor about the size of a partridge egg, with a nevus over the most salient point, and which, she informed me, grew rapidly from the date of the child's birth, increasing when the child cried, and producing a slight bulging of the fontanelle, which was also noticed when I made gentle pressure upon the base of the tumor.

I gave it, as my opinion, that we had a spina bifida to deal with, which was concurred in by my consultants, and that on account of the rapid growth of the tumor, and the attenuated condition of the sac, together with the small size of its pedicle—which in diameter was only about 1 to 2 inches—that the best procedure would be total extirpation and advised an operation. The consent of the parents and consultants being obtained, the patient was prepared for an operation, which was performed on April 20.

I was assisted in the operation by Dr. W. A. Bryan. Chloroform was the anesthetic chosen, but as the patient did not do well under this anesthetic, it was changed to ether, which proved very satisfactory, the patient standing it excellently during the whole of the operative procedure. An irregular incision was made at the base of the tumor, the object being to obtain as large a skin flap as possible. The skin was dissected from the sac, which required a very delicate dissection for separation, and the pedicle disclosed, which upon examination proved to be about the size of a quarter dollar. The pedicle was seized between two fingers for the purpose of seeing if there were any spinal nerves in the contents of the tumor, but none being discovered by this examination, a clamp was carefully adjusted to the pedicle and symptoms watched. Nothing of an alarming character developing, the sac was opened at its side and drained. This incision was now enlarged and a very careful examination made of the contents of the interior of the sac, which proved to contain nothing but cerebrospinal fluid. The pedicle was now transfixed beneath the clamp by a needle loaded by a double silk ligature; this was interlocked and the pedicle ligated. The stump of the pedicle was stitched by a double row of catgut sutures and made perfectly water-tight; the skin flap—which proved abundant—approximated by silk sutures and the wound dressed.

From March 20 to March 25 the temperature was below 100 F., with corresponding pulse rate and respiration; the first dressing was made at this date and no leakage discerned. On the evening of March 25 the temperature rose to 103 degrees, which proved to be due to a stitch-wound abscess in the skin flap; this stitch was removed and the wound thoroughly cleansed and dressed.

The temperature from this date immediately decreased, the wound being dressed each day, and on March 27 it struck the normal line. The remaining silk sutures were removed on the seventh day, the wound found almost healed, and from this date the child made an uneventful recovery, and was dismissed entirely well on April 8.

In conclusion, I desire to call attention to the following points:

The child I operated on was less than three months old; the tumor was rapid in its development, and threatened rupture was imminent; the pedicle was small, and consequently easily dealt with.

With authors to the contrary, I claim the only conservative plan that could be adopted is the one carried out in this instance; which leads me to say that, in the vast majority of cases, each individual surgical case is a law unto itself, and we have to exercise that good common sense, without which surgery would be at a standstill.

Cacodylate of Soda.—A correspondent calls attention to the editorial in The Journal for August 17, p. 455, on "Cacodylic Acid." He says: "There is an error in calling this cacodylic acid, for cacodylic acid as such is not used medicinally to any extent, but the sodium salt, known as 'cacodylate of soda,' is extensively used in some parts of the country, and I have had a broad experience in observing its effects. The cacodylic acid has been known for many years as possessing the virtues of arsenic, but it could never be used satisfactorily until it was combined with a sodium base. It is now used both hypodermically and internally, and I consider it one of the best remedies we have for many conditions."

THE IMMEDIATE AND REMOTE EFFECTS OF BRAIN INJURY.[*]

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Immediate Effects.—The phenomena which immediately follow as the result of brain trauma are interesting chiefly on account of their diagnostic value in revealing the nature and extent of the injury and are of some importance in determining the questions of prognosis and treatment. It must be considered, however, that in many cases the early manifestations may not reveal the seriousness of the lesion fully and may be misleading. On the other hand, the first symptoms may indicate a more grave condition than the subsequent history will confirm.

The early symptom most generally observed in serious head injuries is a state of unconsciousness. What this may signify can not always easily be determined from the symptom alone. The question of importance in this connection to be considered at an early moment is, whether the unconsciousness is from hemorrhage, or from concussion or contusion of the brain. The manner in which the injury is received is of the utmost importance in determining this question.

1. Whether the patient has fallen from a height, striking on his head in such a manner as to produce a serious lesion at the base of the brain.

2. If a direct blow has been received on the convex surface of the skull and of such a character as to produce a lesion in the cortical or subcortical brain substance. Having determined with reasonable certainty that the lesion is in the convexity of the brain, the value of ascertaining whether or not a considerable hemorrhage has occurred is very great in determining the immediate result of the injury and the treatment to be employed. The nature of the blow and its location may be of some importance, but can not always be relied upon. For instance, it is known that a man has received a blow on his head, but when he comes under professional observation, the marks of it may have been so completely obliterated, or may not have existed at all, or may be so general in character as not to reveal where the force of the blow was applied, and unless there are some focal symptoms the surgeon may be in serious doubt as to what has really transpired within the cranial cavity, and he patiently but inconsiderately waits for consciousness to return while an increasing hemorrhage is going on.

The unconscious state in itself will not reveal whether it is due to concussion or hemorrhage—except the hemorrhage from a cerebral artery, as in an apoplexy—and as the hemorrhage due to trauma is generally meningeal it does not produce the coma of a cerebral hemorrhage. While the general manifestations of unconsciousness do not indicate the cause, the manner of approach is in many cases significant. The appearance of the unconscious state some minutes or an hour or two after the accident or the return of consciousness after a primary loss, followed shortly by a reappearance of the former state, are almost diagnostic.

The unconsciousness due to hemorrhage is of course a pressure unconsciousness, and if the pressure is from a fracture with depression, the physical condition will reveal the fact, or if the marks of violence are found over the region of the middle meningeal artery, the fact should be very helpful in our diagnosis. If then the first symptoms of intracranial injury are determined to be from a rupture of a meningeal artery, particularly the middle meningeal, the immediate effects of the injury may be regarded as serious unless a prompt surgical procedure is employed. Three cases are now presented illustrating the foregoing observations:

FIRST SERIES.

Case 1.—A brakeman was found lying on top of a freight car in an unconscious state. The cause of injury and the immediate symptoms were unknown. No marks were found on his person. He came under my care three days after the injury. He was unconscious, but somewhat restless when disturbed. There were no focal symptoms, but the long-continued unconsciousness was significant of some serious brain injury, which it seemed proper to especially inquire into. When the scalp was shaved there appeared to be a slight tumefaction in the anterior temporal region. The skull was exposed, a linear fracture was found crossing from frontal bone into parietal without displacement. Trephined over middle meningeal artery. A large clot of blood was found from rupture of artery. Clot removed, patient recovered and finally resumed work.

Case 2.—A fireman struck his head against the side pieces of a bridge; train not moving rapidly. He was picked up in an unconscious state. I saw him three or four days after the accident. He was still unconscious. Paralysis of right arm, right leg and right side of face. Diagnosis: Compression from sub-dural hemorrhage, left side. Attending physician and friends opposed to operation at this time and trephining was not resorted to, contrary to my judgment. A week later he began to manifest evidences of returning consciousness. It was then discovered that he was completely aphasic! Could produce unintelligible sounds, but could not utter a word. In about three weeks was able to say, "yes," and "no." Could move his paralyzed leg a little, improvement appearing in face, speech and lower extremities in about equal degree, reaching arm and hand last, i. e., the pressure was greatest and most persistent in motor centers for arm and spreading out above to centers for lower extremities and below to face and speech centers. Cleared up in upper and lower extremities of motor area first and approached middle points last. The man made a complete recovery and resumed his employment as a fireman. I have always doubted the wisdom of the let-alone treatment as a principle in brain surgery, notwithstanding the fact that this patient recovered without operation.

Case 3.—A young man, 24 years old, received a blow in the right temporal region from the fist of a companion during a controversy. The man was not knocked down, and it was supposed that he was not seriously injured. Walked to a house near by. Soon after complained of a headache and dizziness. Laid down on a couch. Two hours later he was found unconscious. After an interval of two hours more, he was seen by a physician, who apparently did not regard the case as serious. During the night the man died. Was present at autopsy ordered by coroner. No fracture of skull. Rupture of middle meningeal artery with a large hemorrhage which produced the fatal result.

The three cases above referred to illustrated three important classes of facts in relation to head injuries: 1, an indeterminate degree of trauma without definite symptoms to indicate the extent of injury; 2, an indeterminate degree of trauma with definite symptoms of a focal character; 3, a definite degree of trauma with definite symptoms to indicate the nature of the lesion. All were cases of hemorrhage and amenable to surgical treatment. All were due to direct violence applied to the head without the complicating influence of falls in which the weight of the body adds an important factor in damaging the brain at points remote from the application of force as seen in another series.

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[*] Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section: W. J. Mayo, H. O. Walker, and A. J. Ochsner.

SECOND SERIES.

Case 1.—A young lady was riding in a platform spring wagon. In crossing a bridge, the bridge fell a distance of 20 feet, striking on the surface of the water. She was not thrown from her seat and was apparently not much injured. She disengaged herself and walked a distance of nearly a half mile for help. Returned home and was apparently well for three days and then began to manifest speech difficulties. The aphasia increased and finally became complete. There was twitching of the muscles, particularly of right side. Became dull and stupid. Had a rise of temperature and finally fell into an unconscious state. She developed secondary pneumonia and died thirty days after the accident. I saw her a few days before she died and afterwards assisted in the autopsy. It was shown that at the time of the injury the left second frontal convolution and striate body were lacerated, establishing a communication between the left lateral ventricle and sub-arachnoid space. From this focus a process of softening had extended into the left third frontal and farther into the striate body. The vessels in this region were much congested and there was a considerable increase of cerebrospinal fluid tinged with blood. There were no clots and the blood seemed to come from numerous ruptured capillary vessels.

Case 2.—A man was sawing off a large limb from a tree twenty or thirty feet from the ground, and was sitting on a limb below. When the sawing was nearly complete the limb fell, striking him in the head and carrying him to the ground. He was found unconscious, with an ugly and extensive scalp wound in right parietal region. No fracture of skull. The location of the wound and the symptoms taken together apparently excluded hemorrhage. On the third day skull trephined at seat of injury. Dura tense and pulseless; incision was followed by the escape of considerable clear serous fluid. Drainage provided for. Fluid continued to escape freely for several days, when the patient died. No autopsy. It was presumed that the combined effects of the blow and the fall produced such widespread damage to the brain as to result in death. The skull was very thick, and no doubt offered great resistance to fracture influences.

Case 3.—A brakeman was thrown from a freight train in a collision. Train moving rapidly. He was found unconscious, with many bruises on his head. Saw him on second day. No fracture of skull discovered. No focal symptoms, but unconscious. Trephined at the point of apparent greatest injury—in right temporal region. Dura protruded into opening, pulseless; incised dura. a considerable quantity of clear fluid escaped with some force. Brain considerably depressed at this point by the accumulated fluid, but came up after being relieved of pressure. The man died a week later from an injury to the lung by a fractured rib. He is said to have shown signs of returning consciousness.

The above cases are selected to show the influence of much more violent injuries to the brain from the existence of more widespread influences in the organ itself. In the first series the force of the injury was expended upon a distinct and circumscribed area of skull surface and produced lesions in the brain of limited extent—chiefly pressure influences arising from hemorrhage. These cases, from the nature of the injury and the location, together with the symptoms following, point so clearly to what has transpired in the skull that a careful consideration of all the facts ought to lead to an early diagnosis and an operation for the relief of conditions, which are easily within the reach of the surgeon and which promise the most brilliant results.

The second series of illustrative cases present certain important pathologic facts. The direct injury to the brain may not have been more serious in its effects than in the first series, but the indirect influence of the fall, the jar to the skull contents and the movements of the cerebrospinal fluid may have effected more or less widespread contusion or laceration of the brain.

The first symptom—unconsciousness—may present identically the same phases and leave nothing in this respect to differentiate the two classes of cases; but when the surgeon carefully considers the history of his case in so far as to estimate the nature of the force and the manner of its application, he will be able to more than make a guess as to the gravity of the case, its prognosis and the principle of treatment to be employed.

A third series of cases illustrates the effect of a more limited area application of force than the first. The damage to the brain will chiefly depend upon the part of the brain involved, the extent of brain penetrated, the question of infection and the treatment employed. A variety of the class of cases here considered is well known to the military surgeon who has had actual experience in an active campaign. For obvious reasons I shall omit any particular reference to gunshot wounds of the brain and consider only such injuries as occur in civil practice. These cases are not generally dangerous to life if proper consideration is given them early; on the other hand, neglectful care at an early moment is liable to be followed by brain infection, particularly so if the surgeon fails to sufficiently explore the wound to remove fragments of skull and other foreign bodies which may be driven into the brain.

THIRD SERIES.

Case 1.—A farmer was stacking hay, using a hay fork moved by horse power. The frame-work over his head fell in such a manner that the end of a projecting bolt struck him in posterior frontal region. The skull was penetrated. As soon as possible I examined the man and found a punched-out hole about ¾ inch in diameter. This was enlarged sufficiently to permit of an exploration. Some fragments of bone and a piece of felt hat were removed from the brain. The patient recovered without sequelæ.

Case 2.—A boy, in an attempt to jump on a moving freight train, fell and lost his right arm at the shoulder joint, under the car wheels. At the same moment the end of an exposed bolt struck him on right frontal bone just above the hair line. When placed on the operating table he had a series of convolutions, which subsided when anesthetized. The bolt had penetrated the skull, carrying into the brain some fragments of bone. The opening in skull enlarged and fragments of bone removed. Recovered without any mental impairment.

Case 3.—A young man was struck in frontal bone just below hairy scalp by a pistol ball. The ball split on the outer table of skull. It was found that fragments of bone had been driven into the brain causing some laceration of brain tissue. The fragments were removed after enlarging the opening sufficient to explore with finger. Patient recovered without mental or other nerve impairment.

The treatment of these cases involved no difficulty whatever, but if it had not been employed promptly with a view to meeting certain cardinal principles of surgery, infection would certainly have occurred early with the most disastrous results. The cases of the character above described were not followed by any remote effects. It will be observed that the anterior lobes of the brain were injured in all these patients. A similar series could be presented where the injury was to the posterior region of the brain with less fortunate termination, both as to immediate and remote results, particularly the latter. It has been observed by a number of writers that injuries to the posterior regions of the brain have been more serious than similar injuries to anterior portions.

Remote Effects.—The second section of this paper relates to the remote effects of brain injury. The cases referred to, as a rule, present no alarming symptoms immediately after the injury, and many of them present no indications for operative procedures. Others apparently do not make exception to the surgeon who has had considerable experience in brain injuries. They include cases which the practitioner believes will recover if left to themselves, and yet the experienced surgeon can see indications which point to serious results in the future, although as to the present recovery may be confidently expected.

I find it convenient to group the cases into two classes: 1, those involving pressure lesions, manifesting focal symptoms or irritation lesions, expressing themselves in Jacksonian epilepsy; 2, those involving nutrition lesions resulting in more or less extensive sclerosis manifested by mental symptoms of a more or less marked degree.

The importance of considering with care all cases of injury to the head which may produce lesions in any degree amenable to surgical treatment is very great. Experience has abundantly shown that if a course of waiting is permitted for future results, when the sequelæ are actually developed, an operation is then too late to cure what might have been prevented.

In the first class above referred to of cases considered in relation to remote effects of head injuries, may be included cases of fracture with depression and without symptoms, and cases suspicious of depression, or hemorrhage with focal symptoms. Fracture with depression and without symptoms will from the nature of things exercise a localized pressure upon the brain surface and particularly if a rough edge or spicula of bone bears upon the dura, and lead in many cases to irritation and local nutritive changes in dura, and pia-arachnoid with adhesions to cortex and even connective tissue formations in the cortex itself. In other cases where the examination shows no apparent fracture or depression, focal symptoms appear proving conclusively that a pressure lesion exists in the cortex, which in time results in organic changes in the brain giving rise to unfortunate sequelæ, and when the results do appear the effect of a late operation is always problematic. From my own experience I can not see what excuse can be offered for a neglect to restore, as far as may be, normal conditions by an operation. It is no doubt true that in some instances no serious results follow from the class of injuries above referred to, but the experience of surgeons point to so many individuals whose usefulness has been seriously impaired by secondary brain changes that the most thoughtful consideration should be given them and operative procedures should not be withheld when a doubt exists.

A child 2 years of age, while sitting in a high chair, was in some accidental way thrown backwards, striking the back of its head on the floor. The occipital bone was somewhat depressed. Some time later it was noticed that the child could not see well, and when it came under my notice two or three years later was totally blind. There was plainly pressure on the occipital lobe with certain secondary changes, leading to total blindness.

A young man was standing on the railroad tracks at a street crossing, watching an approaching train. An engine came along on the track on which he was standing and knocked him off. He was unconscious for two or three days. His physician found a scalp wound crossing from left to right parietal bone in posterior region, but no fracture. It was noticed during the period of unconsciousness that the right leg did not move freely, but the doctor saw no significance in this fact. Two months later I saw the man as the medical officer of the railway company, and found a scar two inches in length extending from left to right side of median line in posterior parietal region. The principal force of the blow was on left side over superior parietal gyrus or over leg center. Result was incomplete motor paralysis of right leg. No doubt a pressure lesion from a depressed fragment of bone existed. He refused treatment on account of a prospective claim for damages. Doubtless the unfortunate remote result could have been avoided by proper early surgical treatment.

In a small percentage the traumatic aseptic focus in the brain becomes the point of departure of lesions leading to a slow process of interstitial sclerosis more or less extended. These local disturbances of nutrition are closely connected in many of these cases with a permanent pressure irritation arising from untreated lesions which are within the reach of the surgeon and follow unwise conservatism.

In my own experience no case has occurred in which a localized lesion in the brain has been followed by either epilepsy or insanity when early operative treatment has been employed, except in wounds of the brain which have healed with scar production; while on the contrary, I have opened the skull many times at the point of an old injury for epilepsy or mental derangement with uncertain benefit and found localized organic lesions in the brain which I am quite sure in most cases could have been avoided.

The second class of head injuries are not uncommon and are particularly serious in regard to future results because of the fact that they involve widespread minute lesions which remotely affect the nutrition of the brain and bring about changes in the delicate mechanisms of the organ. The more diffuse sclerosis of a more widely extended nutritive disturbance is quite beyond the reach of the surgeon and the sequelæ must be regarded as permanent.

I have among my list a number of cases, particularly among trainmen who have fallen from rapidly moving trains and received head injuries, the symptoms of which precluded the probability of a fracture of the skull or of any localized hemorrhage, but were unconscious for several days. The return to consciousness was preceded for several days or weeks by a mild delirium, but they finally regained their mental balance. returned to work, and continued their employment for a few months or a year when it became necessary to discharge them from service on account of a developing insanity. The pathologic condition, as it appeared to me, was a more or less widely diffused connective tissue proliferation or a chronic meningitis.

Among localized brain injuries which should be excepted when considering trauma, may be mentioned scar proliferation from wounds of the brain itself. The scar thus produced may remain as a permanent condition or may undergo cystoid or other degeneration developing late symptoms. In a limited number, these cases are amenable to surgical treatment if considered early.

An interesting case of this kind came under my observation a few years ago. A boy 9 years of age received a gunshot wound. The ball entered the orbital plate near the inner angle of right eye and escaped from right parietal bone posterior to the upper end of the fissure of Rolando, passing through the fibers of the internal capsule. I saw him six years after the accident, on account of the appearance of the premonitory symptoms of epilepsy. The boy had suffered no mental impairment, but the opposite arm and leg had not grown equal in length or size with those of the right side and he could use them but imperfectly. The scar tissue at point of exist of ball was dissected out. The opening in skull was enlarged and brain exposed. A well-developed cystoid scar was found and dissected out with complete relief to the epileptic symptoms.

Simple and compound fractures of the skull are omitted, except in so far as they relate to hemorrhage or future conditions of the brain. It is only intended to consider varieties of injuries which present elements of doubt as to what has occurred within the cranial cavity concerning immediate results which may interest the surgeon and the question of remote effects which may or may not be in a measure under the control of surgical treatment.

A large percentage of the cases referred to in this paper have possessed elements of liability either on the part of corporations or individuals and have potentially or in fact been the subjects of medico-legal investigation. For this reason not only have they been considered from the standpoint of the operating surgeon, but also for the purposes of an expert opinion. The observations referred to are now of great service to me in determining at an early moment the probable pathology of brain injuries with the view of obtaining the best practicable immediate results with as clear a conception as possible of what the future may bring. The following conclusions are offered:

1. Violence of no great intensity when applied to a limited area of skull may cause a fracture with only momentary displacement with a rupture of a meningeal artery, or a rupture of an artery without fracture.

2. A localizing injury which may lead to a fracture without displacement and hemorrhage does not as a rule cause a serious permanent brain lesion if early and judicious surgical treatment is employed.

3. A fracture may occur without apparent displacement, yet a real localized pressure on the brain exist which may cause irritative changes involving a more or less extended sclerosis and remote secondary results, as epilepsy or mental impairment.

4. A blow may be received on the head which may produce a more or less extensive laceration of the scalp which in itself is not serious. But the fall from a height or from a rapidly moving train may produce more or less extensive contusion or laceration of brain tissue leading to serious immediate or remote effects.

5. A fall from a height or moving train may without a fracture cause directly or indirectly a contusion or laceration of brain tissue or so disturb the cerebrospinal fluid as to primarily bring about such changes and cause immediate results or secondary serious remote effects by inducing degeneration and final interstitial changes producing insanity.

6. An injury may be of such a character as to produce a localized wound of the brain that may heal with the production of scar tissue which may extend, may or may not undergo cystoid or other degeneration with serious remote effects.

7. In the absence of localizing or other definite symptoms to indicate the nature of the lesion, the character of the accident and the manner in which the force is applied is of great value in reaching a conclusion as to the probable nature of injury to the brain.

DISCUSSION IN SYMPOSIUM ON SURGERY OF THE BRAIN AND SPINAL CORD.

Dr. W. W. Keen, Philadelphia—I think Dr. Eve has taken in his paper the proper ground in reference to the treatment of spina bifida. The time was when the injection of Morton's fluid, tapping, etc., were all we could do, but with the advent of modern cerebral and spinal surgery, and especially the introduction of the antiseptic and aseptic methods, I think we ought, except in occasional cases, to advocate such a treatment, and subject our cases of spina bifida to operative treatment, with or without closure of the opening in the spine, according to the nature of the case.

In Dr. Fenger's paper,[1] I was disappointed, in that he limited the exploration to the search for pus. We must have a very clear distinction in a methodical exploration of the brain for collections, either of pus or of purulent or semi-purulent fluid or of serum in some cases which may be outside the ventricle, but yet in the substance of the brain, or in other cases which are distinctly in the ventricles themselves. I have employed very much the same methods which he has advocated, by various instruments, especially for exploration outside of the ventricles, but, of course, in the texture of the brain itself. In the ventricles, however, we can also find fluid. More than ten years ago I proposed as a methodical operation and I formulated the process of several routes by which the ventricles themselves could be reached, and the ventricular or other fluid that may be there could be evacuated from the ventricles and the ventricles washed out—even irrigated from one side to the other. Unfortunately, a very elaborate paper which I presented at the International Medical Congress in Berlin was lost by the secretary and as I have no copy I have never had enough leisure to pursue the subject again; in that paper I have gathered all the recorded instances in which the ventricles have been opened by accident or design, and I will show very clearly that opening the ventricles is not the dangerous procedure or the dangerous accident that has been supposed. Within about six weeks I have had a very remarkable case and wholly an exceptional one in my experience, a young man who, in 1892, was thrown from a horse and had his skull fractured in the posterior lateral region on the right side. Epilepsy supervened seven years afterwards, in 1899, and I trephined him about six weeks ago, because at the time of his accident, there having only been small bits of bone removed, it was possible that there might be some lesion inside of the skull which had not been discovered. After I opened the skull I found the dura and opened it and evacuated a considerable quantity of fluid, and then at a distance of a centimeter (in size), not having seen any of the cortex of the brain, I found the skin over this membrane was scarcely as thick as the lining which covers the inside of an egg. It contained fluid, color dark. On incising this, a large amount of fluid escaped. Doubling up a bit of silkworm-gut to make a measure and yet not too sharp to puncture the brain tissue, I passed this in and found that I entered the cavity 10 centimeters in depth. Finding so large a cavity and desiring to know the nature of it, I incised a little farther this inner membrane. Then, to my astonishment, when I separated the edges and looked in by means of the electric light, I found that I opened widely the lateral ventricle. There was no free cerebral tissue arching over the lateral ventricle at all. Whether this had been absorbed as the result of accident or whether it had been destroyed as the result of accident, I can only surmise at the present time. I confess I was greatly startled when I saw this large open cavity with its choroidal plexus; I was perplexed to know what to do, but afterwards I concluded, in view of the fact that there would be some hemorrhage, that it would be proper to drain for a time. I inserted a small amount of gauze and brought this outside of the scalp wound which I then closed. To make a very brief story, next day I removed the drainage. Twice after that I was obliged to insert a pair of forceps, at once evacuating a considerable accumulation of fluid, which produced headache and which seemed to portend the possibility of epilepsy returning and the man recovered. Two weeks after the accident he had two or three epileptic attacks in the course of one day. Since then, as far as I know, he has had none. But, of course, the time passed is too short to decide whether any permanent good will be done or not. I fear not, but the proposition that presented itself to me was that open ventricle, opened practically its entire length. It was totally new and I was very happy indeed to feel that the solution apparently seemed to be the correct one.

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[1] Dr. Fenger's Paper on "Methodical Exploration of the Brain for Fluid" has not yet been handed in for publication.

As to Dr. Fairchild's paper, I was very much interested in it and I think he has taken quite the right ground that interference is imperative upon us in these cases. In hemorrhage, of course, of a typical character, we have the three consecutive stages which are so important for us to recognize, namely, unconsciousness or partial unconsciousness of stunning from a blow; the recovery from this, and then, later, as either drop by drop, or in large quantity, the blood accumulates, the secondary unconsciousness which is due to pressure from the blood clot; but we must draw very sharply in our minds the distinction between the two totally different rates at which the blood accumulates. If you have a small rupture, a little laceration of a small branch of the middle meningeal or middle cerebral, you will have little leakage of blood, that will come drop by drop and you will have the period of secondary unconsciousness postponed. Or, if on the contrary, a large branch, and especially the main branch of the middle cerebral, ruptures, then you have the blood pouring out so rapidly that the period of unconsciousness between the two is obliterated. After the man recovers from the unconsciousness of stunning or blow, the unconsciousness is very apt to overlap. The other of the two experiences I had, was one of a man who fell to the floor of his barn from a hay-mow. I saw him three hours after the accident. There was no fracture of the skull. He had two or three wounds of the skull which I explored, but found no fracture. He was absolutely unconscious with stertorous breathing, with no paralysis; there was no motion; no method of determining voluntary or involuntary—I mean no paralysis of one side of the body. It was clear to my mind that we had a large hemorrhage in the skull. Which side was it? You have absolutely no guide in the matter of paralysis in one side or the other—only one trifling guide, which, however, proved of the greatest possible value. Though both pupils were dilated very much, on the left side the pupil responded very slightly to light, but did not respond to light on the other side. I judged, therefore, that upon the right side was the clot and I determined to trephine at once and if I did not find any clot to go up on the other side. The moment I trephined on the right side I found an enormous clot. The brain substance was pushed away from the inner surface of the skull and both the anterior and posterior branches of the middle meningeal were found ruptured and bleeding. The injury was so severe that life could not be carried on and in consequence of it the man died in the course of a few hours. I had used it, not so much by reason of the result as because it illustrates very well how the very fact of that pouring out of blood may make the period of unconsciousness overlap the second and obliterate the intermediate stage and enforce the proper treatment—especially the diagnosis by means of the very slight reaction of the pupil. On the contrary, instead of this intermediate state of unconsciousness being very brief or obliterated, it may be extraordinarily prolonged. Usually we know that it will be two or three hours up to a day or two. A few days ago I had an opportunity to see a decidedly exceptional case of a man in the other direction. A man was thrown off a street railway car directly in front of the Pennsylvania Hospital and received an injury on the left side of the temple. He was taken into the hospital, scarcely unconscious, stunned only. After two or three days there were, it seems, no symptoms which called attention to the fact of the necessity of his staying in the hospital. Six weeks afterwards the man became gradually duller and duller and finally became unconscious. Later when I trephined him on the left side over the anterior branch of the middle meningeal, I found a vast clot extending from the frontal region over to the occipital, where I made, as suggested by Weir, another opening through the posterior portion of the brain and passed drainage through. It was as large a clot as in the first place and I had in that case the happiness of seeing this man recover, although with a somewhat injured condition of his brain. He is slightly aphasic, still in a serious condition and will be all the rest of his life. The two cases illustrate the two extremes of hemorrhage which are so important for us to recognize and for which I think Dr. Fairchild has eminently recommended the proper treatment.

Dr. Angus McLean, Detroit—Dr. McCosh recommended that after laminectomy the patient go without support. I have tried it and find that patients get along as well without the support as with it. I have found much trouble in keeping on a support or spinal brace and think that the heavy muscular tissue there falls back in apposition and protects the posterior portion of the spine quite well.

As to Dr. Eve's paper on spina bifida, I think it is a good step to attempt the closure of the operation without aspirating or injecting fluid, but I think that it would be applicable to just such cases as he had with a small pedicle. I think the judgment of the operator would have to be called into consideration.

The last paper on injuries of the head is an interesting one. Those who fall from a distance or are thrown from a train as compared with those who have had something fall on them, or received a blow upon the head, are injured quite differently. A person receives a direct blow on his head; the force is spent over the vertex. It injures the soft tissue and may fracture and depress a limited portion of the skull. In a case like that, the endocranial contents—the brain tissue—is not disturbed much; the disturbance is more local. A person who falls from a building and strikes his head on the ground produces a general commotion of the cerebrum; the skull is elastic and impressionable; that has been demonstrated by many. The skull can be compressed laterally in a comparatively young person or in a person in middle life from one-quarter to one-half inch. You can put a clamp on the skull and compress it. The lateral walls come together and the tissue within must change; there must be a movement there of the brain tissue. A fall, striking on the head, will lessen the skull's diameter: there is a general commotion and the whole brain tissue is disturbed. An injury like that, without a fracture, is more dangerous than when you have a circumscribed, depressed fracture. You do not know how many small traumata you have there, nor the results. You may have disturbance of the ventricles or an injury to the roots of the cranial nerves or some such thing. Fractures of that kind, from a fall, are usually linear and frequently cross the base. If you take a skull and press it laterally over its opposite sides the fracture will not take place over the points of pressure, but across the base of the cranium, usually in the anterior portion or the portion anterior to the foramen magnum. That portion has a number of cavities and fissures; it is really the weak portion of the cranium.

Dr. Keen went over the different hemorrhages quite well: extradural, subdural and intracranial hemorrhage. In speaking of concussion or compression it is hard to say where concussion ends and compression begins. A slightly depressed fracture may produce compression that will afterwards disappear. Now, you first may have a compression there and, in time, the symptoms of that compression will disappear. In that case some cerebral fluid will escape from the cranium into the spinal canal and lessen the cranial tension. The spinal canal is not a bony canal, but made up partly of fibrous tissue. Where the whole brain enters into the commotion, it is much more serious that a slight tap on the vertex. You can have a much more dangerous lesion without fracture than you can have with a localized, circumscribed fracture and I think those patients deserve to be watched very closely for symptoms which may not show themselves in the first twenty-four hours, but may at the end of the first week; and they should be kept well under observation. I wish to say that in those injuries to the head produced by a fall, where there is much commotion the injury to the brain is to be considered the serious part, and not the injury to the skull.

Dr. Charles H. Frazier, Philadelphia—I should like to bring to the attention of the Section an operation that I would advocate for the relief of tic douloureux, or trifacial neuralgia, a modification of those operations previously recommended, in that it depends for its success upon the division of the sensory root of the ganglion and not on the removal of the ganglion itself. Every surgeon is aware of the difficulties besetting this operation and of the frequency with which operators have been unsuccessful in attempting to remove the ganglion *in toto*. Most all recognize hemorrhage as the greatest bugbear and accountable for the majority of failures and for not a few fatal issues. The most troublesome hemorrhage met with in this operation begins at the time the surgeon attempts to remove the ganglion from its bed and the most alarming hemorrhage may occur at that time as the cavernous sinus may be injured. Any modification of the present operative procedure which relieves the operator of the embarrassment, annoyance and anxiety of hemorrhage is deserving, it seems to me, of some consideration. Granting, for the time being, that the division of the sensory root will, *per se*, effect a radical cure of trifacial neuralgia, the advantages of this over other procedures are evident to all. Chief among them are the following: 1. Generally speaking, its execution is comparatively simple. 2. It reduces to a minimum the most annoying feature of the operation, namely, hemorrhage. 3. The operation is practically complete when the posterior aspect of the ganglion is exposed, a time after which in other operations one begins to encounter the greatest difficulties. 4. The integrity of the cavernous sinus is never in danger. 5. The risk of injuring the sixth nerve is avoided. 6. Lastly, the mortality should be reduced, chiefly because less traumatism is inflicted upon the tissues, less time is required and less blood will be lost. All these conditions should lessen the tendency of shock.

The operation itself resembles those which approach the ganglion through the temporal route, and is conducted as follows: 1. The ganglion is approached by the temporal route, a horse-shoe flap of skin and subcutaneous tissue being reflected with its base line one-half inch below and parallel to the zygoma. 2. Resection of the zygoma. In carrying out the operation upon dogs, in which the field of operation is, comparatively speaking, small, we find it absolutely necessary to remove the zygoma in order to be able to reach the ganglion, and in our work upon the cadaver we find this step in the operation very materially facilitates the approach to the ganglion. 3. Reflection of horse-shoe flap. 4. Removal of button of bone with trephine from an area corresponding to the center of the field exposed. 5. Enlarging opening with rongeur forceps. 6. Exposure of the ganglion by reflection of a flap composed of dura mater and dura propria. 7. Picking up and division of sensory root upon a blunt hook.

We have taken for granted that the effect of division of the sensory root will be permanent. This statement is based upon the assumption that physiological repair of the nerve will not take place at the point of division. To prove this, I began some fifteen months ago, with Dr. Spiller, a series of experiments upon dogs upon which was practiced the operation as above described. After the lapse of varying periods of time, the animals were killed and the specimens removed for histologic examination. Dr. Spiller now has in his possession a number of such specimens and while not yet prepared to make his final report, he has not as yet seen any evidence of regeneration of nerve fibers. Leaving for the time out of consideration what weight the results of these experiments might carry, and drawing an analogy from what we know is the case in the spinal cord, it is reasonable to assume that with the sensory root of the ganglion physiologic repair is more than improbable.

Dr. Robert F. Weir, New York City—There are two things upon which I would like to say a few words. In connection with these brain operations there is one point I consider of great moment about which we should all come to some conclusion, and at which we have not yet arrived. It is easy enough to come to a conclusion with a compound depressed fracture of the skull without symptoms; still more so with symptoms. We think those cases with depression should be operated on. Our distinguished friend, Dr. Agnew, of Philadelphia, went so far as to say that every fracture of the skull had better be operated on. I am not sure but that he is right. My efforts are directed just to that class of fractures where we have a little wound of the scalp and on exposing it, looking at it, and sticking your finger in and feeling it, you find a crack in the bone. You expose it and find a fissure. No symptoms. What are you going to do? Leave it? A little depends as to how the injury was received. If from concentrated violence, you know you had better open that skull, because from such violence the very brittle anterior table is apt to break and you may have danger there far exceeding that on the surface. In many of these cases, you can not learn how the injury was received, or it may have been received by a simple fall on the floor. What should you do then? For many years I did nothing but let it alone; I have lately changed my mind. I have seen many patients who have had subsequent trouble. I have seen many having trouble when I opened the skull, and found there was from this slight fissure the very danger I expected. As an objection to doing this operation or of going through the skull to see what is the condition of the vitreous table, it has been urged that the trauma that you make coming down to the dura will cause adhesions greater than the original injury produced. You know how surgeons have struggled to obviate such adhesions. You must accept the adhesions. Of late years I have felt easier in my mind in going down into these slightly fissured skulls, seeing what the trouble was. I have felt safer and many times my tentative efforts have been rewarded.

The second point is in regard to gaps in the skull, in any of the operations for trephining for depressed fractures of the skull, and particularly if the gaps are of considerable size, and more particularly if the opening in the skull is in a portion of the cranium where it is likely to be exposed to injury; in other words, if it is below the line of the hat or in front where it would be visible. For these reasons I would suggest and advocate the use of celluloid plates either at the time of operation or at a secondary operation. I have resorted to these some eight or ten times and saw one patient only a few days ago who had been wearing a celluloid plate for over six years. So I speak of what I know from personal experience in connection with this device which was suggested by Fraenkel of Vienna. In four operations that I have had, I have done it according to the older method and I see no reason for changing.

What do we gain by this small incision, such as Cushing has spoken of? We have the small operative field; we merely avoid damaging the middle meningeal artery, as it passes across the dura. I do not see the advantage of these small operations. Nay, I say disadvantage. I have done Celsus' operation for division of the nerve at the foramen ovale and the foramen rotundum, which requires division of the zygoma, and I have found after splitting of the zygoma and replacement, we do not always maintain it in place, and it is attended with a considerable difficulty in opening the mouth. So that with the experience I have had in the older operation, I do not feel like abandoning it for one which brings in a risk in another direction.

Dr. Jacob Frank, Chicago—I do not wish to take up the time of the Section in going over the subject spoken of, but I merely wish to speak on a class of cases that Dr. Fairchild considered and upon which at the present time I am making experiments; in the cases that come into the hospitals where nothing can be found, the patients are unconscious, with Cheyne-Stokes respiration, slow pulse, dilated pupils, and we are at a loss what to do. In 1890, at the time that Dr. Keen was tapping the lateral ventricles, I made a tapping of the lateral ventricle for just such a patient, with the delight of seeing the pulse become more rapid, the pupils contracted, respiration normal and recovery follow. Since that time I have had one more case. I was removed from the hospital that furnished me considerable material, and I have not had an opportunity to get any more cases.

I do not agree with Dr. McLean that if the patient is hit on the head it draws the fluid into the spinal column. This was first brought out by a French experimenter a few years ago, when experiments were made with concussion of the brain. Some would say if a blow was received on the head the fluid would proceed to flow. I do not believe it. My theory is this: It is not necessary to receive a blow on the head to become unconscious or to give us symptoms of the concussion. The concussion can just as well be on the spinal column. That is my belief and I hope to prove that at a future date. That is all. (After a pause.)

Since I have tapped the ventricle for these cases, it occurred to me it would not be necessary to do so. I have produced concussions in dogs and led the fluid off by the spinal column just the same as giving injections into the cord. I hope that some of the members who are connected with hospitals where these cases come in, will tap the spinal canal, and I hope to hear reports of the same.

Dr. W. H. Earles, Milwaukee—Owing to the limited time and lateness of the hour, I desire more particularly to address my remarks to Dr. Fairchild's paper. I think the time is here—the indications from the discussions and papers support me in this—when surgical treatment for injuries of the skull must receive greater attention. I am pleased with Dr. Fairchild's paper and wish he was a little more emphatic in his radicalism. I believe any injury to the head that produces a fracture of the skull is also forcible enough to produce injury to the brain tissue itself. If this be true, then it stands to reason that the surgical treatment of fracture necessarily implies that we should, at least, go down to the brain substance or dura mater and ascertain how much injury exists. In other words, on the presumption that there is a possibility of brain tissue being injured, the skull should be trephined and the parts beneath it examined before closing it up. There is no other place in the human body where a surgeon will cover up diseased or injured parts without knowing what condition they are in, except in injuries to the skull. We all know that in injuries where we have cerebral hemorrhages there will sooner or later be symptoms which, in a measure, will direct us to a possible diagnosis, as to the conditions within; but we also know in a great majority of cases the general symptoms give us but very inadequate ideas of the possible injury of the brain substance itself. Therefore, on this point, I desire to be emphatic and I believe it as firmly as I do anything, that where we have a fracture, as a result of traumatism of the head, the plain duty of the surgeon is to ascertain the condition of the brain before closing up the wound.

We occasionally have injury of the head where there is not even a scalp wound and where the patient will die in three or four hours from internal hemorrhage. If this be true, it ought to admonish us that we ought to be extremely careful. Depressed fragments, we all admit, should be elevated, and Keen says that fractures of the internal plate can only be suspected. Now, if you have an injury to the skull sufficient to produce cerebral hemorrhage, where we are inclined to suspect a fracture of the internal plate, it would be poor surgery to cover up the external wound and dismiss the patient without making an effort to trephine and to satisfy ourselves as to the exact conditions. Having taken these steps, we will then feel as though we treated our patients in at least a surgical manner. We believe that the time has come when surgeons will treat every injury to the skull precisely as though they had trouble in the brain substance or coverings. I draw my conclusions, not alone from my own experience, but also from the experience of those who have had a greater number of cases. From an analysis of 76 cases, in my own practice, I have found injury to the brain or its coverings in 87 per cent., and for this reason, as well as for the reasons before mentioned, I believe we should be more radical in the treatment of these cases and not be satisfied with dealing with the outer surface. We should go down to the brain substance to determine the conditions there and feel that we have, at least, discharged our full duty to our patients.

Dr. James E. Moore, Minneapolis—I am very glad to hear the sensible conclusions of Dr. McCosh. I have been on the fence, for while I have not killed any of my patients with fracture of the spine by operation, the after-results have not come up to my expectations. I have seen some improve, but have not been fortunate enough to secure anything like recoveries or satisfactory results. I shall direct most of my discussion to the paper on spina bifida, because I happen to have had some experience in that direction; I have been interested in the prognosis and treatment. The prognosis has much to do with our decision as to treatment. I am free to say that I agree with those who say they do not believe these cases should be treated by injections. I have concluded from my limited experience, that operation should be advised in the large majority of cases. The writer of the paper laid down the limitations of the operation very sensibly. On the whole, I should rather be inclined to be very heroic. I think we should take an advanced position and advise operation in these cases. With reference to the technic, I have had some very interesting experiences. The prognosis after operation differs very materially according to the character of the case. In those cases in which we have a small opening and in which the tumor is covered entirely by integument, the prognosis is good and the operation is almost free from danger. It simply means that you cut down to the pedicle and close up the wound. That is about all there is to it; but unfortunately the majority of our cases are large tumors. We have found from experience, and from the writer, that we can operate on very young patients. I have operated on them under four months of age, removed a tumor as large as the patient's head and, seemingly, with no bad effects from the operation. At first I was very much exercised lest I should cause serious disturbances to the nervous system from evacuating the liquid too rapidly. I was very cautious to empty the fluid slowly for fear of this trouble. In my third case, in attempting to separate the integument from the lining of the tumor, I made a free incision through it and the fluid was evacuated quickly. I had my patient in this case, as I have in all cases, lying on his face over pillows, hips well up, tilted up to an angle of 45 degrees. When I made this incision there was no change in the child's breathing. Chloroform was the anesthetic and there were no bad effects.

The greatest difficulty in the point of technic with me has been to cover the wound securely, to cover the space in the bone securely and eliminate the dead space. I have not thought it wise or good surgery to undertake an osteoplastic flap in a case of this tender age, for that is a bloody, slow operation. If I thought it was necessary to put a solid substance in this space, I would follow the suggestion of Dr. Weir and put in a solid material of another kind—celluloid,—as he suggests. In my later operations I removed most of the lining of the tumor, most of the meninges, taking care to separate the nerve fibers that are on the inside of the membrane. I am not sure that those nerve fibers are of value. I question whether they have much function after they have been bunched down into the wound. I have turned those down and closed the meninges, and then I have dissected the dense soft parts loose from the denser or bony parts and then made a longitudinal incision on either side and approximated these two flaps, bringing them together with chromicized catgut or kangaroo tendon. My only fear has been where I made my longitudinal incisions and brought these flaps towards the center that I would have dead space, but I depended on the blood-clot.

Another interesting point is that we have an ugly, sloughing surface which is very alarming and I have been very successful in securing asepsis by washing that off, gently, swabbing it with pure carbolic acid and then alcohol. I have repeated this process and succeeded in getting aseptic wounds. I have not had the misfortune to have a patient die immediately after this operation. One died suddenly on the second week after operation.

Dr. R. H. M. Dawbarn, New York City—About ten years ago I had the following patient: A man was struck upon the head and did not at once become unconscious, but gradually, in the course of a week, became so, with symptoms of almost complete left hemiplegia. He was carried to the hospital with which I am connected; in the presence of the late Dr. Landon Carter Gray, I operated upon him, going down, of course, over the right motor area. The disc being removed, the dura bulged into the wound; there was no pulsation. Dr. Gray said: "Very evidently there is a clot immediately beneath." I opened the dura and the brain, covered with its pia, bulged into the wound. Still no clot. I took a slender canula and cautiously tapped in six different directions; in three of these cerebrospinal fluid escaped, evidently from the lateral ventricle, and I allowed, I think, fully an ounce to run away, because of the very severe symptoms of compression. But no clot was found, and no way of accounting for the distinct hemiplegia of the opposite side. The man lived about a week and died none the quicker for the operation, but certainly none the more slowly. I remember at the autopsy I found nothing wrong whatever upon the side where he had been trephined; but on the opposite side—that upon which he was paralyzed—was an enormous clot of blood, between the dura and the skull, as big nearly as my entire palm. If I had never heard of physiology and, as a first-year student might have done, operated upon the skull on the paralyzed side, that poor chap might now be alive. I sent the brain, together with the beginning of the spinal cord, to Dr. Gray, who carefully examined them. He found that it was one of those cases in which the motor fibers had not crossed into the medulla, but had gone down each upon its own side of the spinal cord. I discussed it at a meeting of the New York Surgical Society. Those present had known only of one case, Dr. Joseph D. Bryant's, and the latter had only heard of one additional case of the kind in his life.

I have my doubts about the extreme rarity of these things. Anatomists claim it is not so excessively unusual in examining cadavers; but in clinical surgery it is reported with extreme rarity. Perhaps the reason is that when the customary operation gives no relief and the patient dies, an autopsy is generally refused us. Hence, we can not ascertain the true cause of the failure. The family feel that an unnecessary or a useless operation has been performed—perhaps attribute the death to it—and will not permit an autopsy. Should I ever again fail to find the cause of an acute compression of the brain by trephining according to the laws of physiology, I would now remove a second disc from the skull upon the paralyzed side. This would not add much to the danger of the man and we might save a certain number of lives in this way that otherwise would be lost, as was the case just recorded.

Dr. Weir has spoken most interestingly in regard to the use of Fraenkel's method of celluloid. I have brought with me a special plate of modified celluloid, especially made at my request, containing no free nitric acid and with a large percentage of its camphor removed and a little urea substituted, which is being used now. That plate I propose to show before this Section in connection with abdominal surgery; for filling a gap in the abdominal wall, where there is a ventral hernia, where we can not bring the muscular wall together. The skin is, of course, closed over it. In the skull I have repeatedly used this plate to fill bony gaps, and with much satisfaction. In skull work celluloid plates are not new; but whether they remain for years, and indeed, permanently, and cause no irritation, or soften and yield and act as irritants, depends wholly upon that composition. Celluloid, as ordinarily made, contains some free acids still, and will not do. Synthetically made, the urea acid has for some time been employed to give the necessary spring and elasticity, partly replacing the more expensive camphor, and it seems less irritating to the living tissues than using so much camphor. The plate I show resembles closely a piece of ordinary window pane in thickness and general appearance. When boiled it cuts, while still hot, as readily as soft horn. Being transparent one can place it over the gap to be filled and see to mark upon the plate the exact shape of contour desired.

Dr. A. C. Bernays, St. Louis—It seems to me that the paper by Dr. Fenger has opened a wide field, which heretofore is not mentioned in English literature of brain surgery. He proposes, if I understand him correctly, a systematic search for fluid located in the substance of the cerebrum and cerebellum, on both sides of the head. He proposes, I believe, a small trephine hole, to be made over the parietal prominence and through that trephine hole the introduction of a canula into the anterior and into the middle and posterior lobes of the cerebrum. Then, another hole on both sides of the head, through which a short canula can be introduced into the cerebellum, and, it strikes me, gentlemen, that this is an enormously long step in advance of anything that has been advocated in surgery of the brain, and it also strikes me as being important and a well-justified, well-founded step in the right direction. There are undoubtedly cases which the Doctor reported, in which the symptoms led to a well-founded suspicion of an abscess, in which we can not even tell which side of the brain or head is affected.

Now, I want to say one word about the technic of this operation, and there I think the Doctor should have been a little more explicit. It is not necessary to use a large trephine, but a small burr, not over three-eighths in its largest diameter, the hole in the outer plate being nearly twice as large as the one in the inner plate, so that an instrument could be obliquely introduced through that hole, forward, backward and downward, and that was the reason why I took the floor, to suggest that the hole must not be thought of as being a trephined hole in the ordinary sense, but a small hole made by an ordinary dental burr, or one of those instruments which Schwartz uses for boring a little hole into the mastoid process. Systematic search for fluid in obscure cases will, I believe, be rewarded by fine results.

Dr. T. M. Maxwell, Keokuk, Iowa—I had a case in which the whole left side of the skull was crushed. A piece of bone as large as a dollar was removed; he was completely paralyzed on the left side. After dressing the wound, the patient recovered from the paralysis.

Dr. W. J. Means, Columbus—I will confine my remarks to some points concerning the surgical treatment of injuries and diseases of the spine. It occurs to me that the text-books on surgery are too conservative and vague in their treatment of injuries and diseases of the spinal column. The advanced views in this direction taken by Dr. McCosh I believe to be in accord with the experience of most surgeons who have given the treatment of these cases some attention. In the last few years I have had several interesting cases of injury to the spine that have fully convinced me that the so-called conservatism or "do-nothing" treatment should be relegated to the past and more active and intelligent procedures adopted. Early operations on the spine are called for in every case where there is reason to believe from the symptoms that the cord is impinged upon by displaced vertebræ or fragments of the arch. I will also go further and include cases of hemorrhage either intradural or extradural, where the clot is producing paralysis.

The question of determining the extent of the injury—therefore the necessity and propriety of an operation—is one of considerable moment to the surgeon. In abdominal surgery the question of a positive diagnosis before the operation is secondary. The abdominal cavity is opened and the diagnosis made. Sometimes the character of the disease precludes any interference. The opening is closed and the prognosis determined accordingly. A laminectomy is practically free from danger; therefore, when a diagnosis is obscure, no harm can be done by exposing the injured area and determining the true condition. If the cord has been completely severed, no help can be given; the incision is closed and the friends advised accordingly. Unfortunately we are taught that complete paralysis of the extremities and pelvic organs, both sensory and motor, following an injury, means complete destruction of the cord. This is a false premise and should be corrected.

A case of gunshot wound came under my care a few months ago, in which there was complete paralysis of the body below the waist. There was absolutely no reaction to any test applied. Under the *x*-ray the bullet was located in the 4th dorsal vertebra. The bullet had crossed the spine diagonally, lacerating the membranes of the cord and lodging between the pedicles. There was quite a large blood clot and considerable inflammatory exudate around the portion of cord that was injured. The bullet and the blood clot were removed. Within one week after the operation there was some reaction to stimulation in the legs. When the patient left the hospital a few weeks after the operation he had slight movements of his feet and legs, and has since regained considerable power in them. Another case, an engineer on the railroad, had his spine injured in a wreck. I saw him within two hours after the accident, and found him completely paralyzed below the lower dorsal region. There was a deformity over the 10th and 11th dorsal vertebræ. There was no reaction to irritation either sensory or motor. From the symptoms I concluded the cord was severed and thought it unnecessary to operate. The patient was put in the hospital, and the usual expectant plan of treatment carried out. After ten days there was a return of sensation in certain areas followed by limited motion. The patient gradually improved. At the end of twelve months he could walk with crutches. Evidently the cord had not been severed or crushed. I might enumerate several other cases to illustrate the position I have taken, but this will suffice to emphasize the point that it is impossible to determine definitely the amount of injury to the cord from the existing paralysis. In similar cases to the last one I should operate as early as possible.

The second point I wish to make is that where there has been an injury to the spinal column followed by paralysis, and there is good reason to believe the cord is pressed upon by dislocated vertebræ or fragments of bone, benefit may follow an operation though several months have elapsed. The third point is that laminectomy is advisable in diseases of the vertebræ where the necrosis is confined to the arches and processes.

Dr. George W. Crile, Cleveland—I do not believe there is any difference of opinion as to what to do in any case of incomplete paralysis due to pressure upon the cord. But the question as to whether or not you can accurately diagnosticate complete cross lesion of the cord confronts me. I have had two cases in which I have depended on a group of symptoms to diagnosticate total cross lesion of the cord and the autopsy showed there was cross section. At the present time I have a patient who is recovering from the immediate effects of dislocation of the cord, which I believe to be cross section, but from what Dr. McCosh has said I confess to feeling an uneasiness in this case. I have always held to the dictum that the total loss of all the reflexes, of pain, touch and temperature senses below the point of injury, the loss of vesical, rectal and vasomotor tone show total cross lesion. The question then arises, in a given case of total paralysis, below a certain point of injury, whether you can diagnose with accuracy complete cross section of the cord. That, together with the fact that such a large percentage of cases of dislocation of the cord on the immediate reception of injury to the spinal cord the vertebræ spring back again; that if you do operate you can not give any further relief in that group of cases in which the dislocation is so manifest, operation would not be indicated. But I am free to say that, until it is proven that regeneration of the human cord is possible, any diagnosis of a case of cross lesion, if that diagnosis rests on a certainty, would contraindicate operation. Fact is always greater than theory, and I personally feel that my confidence in the theory I have had is shaken.

I would like to ask Dr. McCosh if he found in this case touch, pressure, heat and pain senses abolished, and whether he found an absolute vasomotor paralysis, as well as paralysis of the deeper reflexes in the case upon whom he operated and after the operation the patient grew better?

Dr. A. H. Tagert, Chicago—I wish to report a case of fracture and dislocation of the spine—2d lower dorsal. The patient was anesthetized and extension, counter extension and manipulation used which nearly restored the continuity of the parts. I put the patient to bed with continued extension and counter extension. When the patient regained consciousness the paralysis, pain and numbness were much improved, the man made a good recovery and for ten years has been able to do hard manual labor.

I will also call your attention to one point in fractures of the skull that is sometimes overlooked. The skull is elastic, so if the violence that makes the fracture is sufficient to spring the bone enough to injure the inner plate or admit septic material, we will find some little particles of tissue or foreign substance in the line of fracture. If we examine carefully the line of fracture and find no fragments of tissue or foreign particles therein and no symptoms of injury to the brain, I would let my case go without trephining; but on the contrary, if I found particles of foreign substance in the line of fracture I would certainly trephine whether we had brain symptoms or not. In these cases, as in all others, good judgment will dictate best what to do.

Dr. E. J. McKnight, Hartford, Conn.—On March 23, a man jumped from a moving trolley car and sustained a depressed fracture on the left side of the head. The bones in that vicinity were much broken up. I think there were three or four pieces. It was impossible to tell how much injury was done. The trephine was entered above and on the side; the bones put in good condition and the man made a very rapid and apparently complete recovery, and was discharged from the hospital certainly before the first of April. Later, my service having terminated April 1, he returned sometime during April with a severe headache and temperature, within the twenty-four hours going up to 105, but not regular, sometimes in the morning, sometimes in the afternoon. Dr. Howe explored the vicinity of the original injury and found everything apparently all right. Later the symptoms pointed more distinctly to the brain and a large flap was dissected off. Smaller pieces of bone were entirely removed and a grooved director passed several times into the substance of the brain. After making three or four attempts an ounce and one-half of clear serum was removed, flowing out in the channel of the director. The man made a rapid recovery from that time and was exhibited at our State Society two weeks ago apparently perfectly well. I should use in every case the grooved director. You can pass a probe in the groove as far as you wish, and it seems to me that it is better than any suction instrument.

Dr. S. C. Baldwin, Salt Lake City—My experience has taught me that even in slight injuries of the skull it is well to trephine oftener than we do. We have had some little experience in the hospital in the use of celluloid plates and we were unfortunate enough to have an opportunity to make an autopsy after using one. We found that a large part of the plate had been absorbed and it was as flabby as a piece of silk; it was simply acting as an irritant instead of a protection.

Dr. J. W. Vaughan, St. Louis—I wish to report a case which had complete paralysis below the fifth dorsal vertebra; sensory and motor nerves, bladder and rectum were affected. The patient was operated on. There was some motion under the influence of chloroform; this particular fact was manifest when there was irritation on the right side of the cord at the point where the incision was made. There was motion on movement of the leg on the opposite side. It was five months' standing, complete paralysis, in which he would not be operated; the vasomotor system was interfered with. Five weeks ago to-day that man was operated on and that man has continued to improve slowly, but constantly. There were no two days in succession in which there was not some improvement; so at this time he has motion all along the left leg. There was motion, after operation, in the left leg; some in the right leg, and anterior to this gradually extending down over the abdomen. Sensation is returning over his abdomen, and the last time I examined him there was some sensation over the penis. He can feel some sensation when the bowels are going to operate; that occurred four days ago—and sometimes when urine is withdrawn.

Dr. McCosh, in reply—I would like to lay stress on the importance of early operation in cases of injury to the spine. The mere exposure of the spines and laminæ by cutting through the muscles of the back is a very simple procedure and is attended with practically no risk. If the laminæ be removed the operation becomes somewhat more serious, but still the risk is slight. As regards the treatment of suspected injury to the spine it seems to me that the same rule which we adopt in cases of suspected fracture of the skull applies also to cases of spinal injury, namely, to expose the bone and to ascertain if there be a fracture.

In answer to Dr. Crile's question concerning loss of sensation to touch, heat, and pain, I would say that there was absolute loss of all three functions. As regards the reflexes, the loss of knee-jerks was absolute and apparently of the superficial reflexes as well. As regards the vasomotor disturbances I am not positive. Formerly I have been under the same impression that the loss of tendon reflexes combined with paralysis contra-indicated operation. I have been led, however, to doubt the accuracy of these contra-indications as I have seen quite a number of cases of injury to the cord which have recovered without operation, where in the first hour or two after the injury the reflexes were almost completely abolished or at least were very hard to discover, and yet in a few hours these reflexes gradually returned, and in one or two days became normal. In the case referred to by Dr. Crile the operation was performed very soon after the injury, and it is possible had it been delayed for say eight or ten hours the reflexes might have returned. They were certainly abolished apparently for several hours, and yet one can not argue but that at a later period they would not have returned.

DIABETES MELLITUS IN CHILDHOOD;

WITH REPORT OF A CASE.*

A. C. COTTON, M.D.
CHICAGO.

The following is the history of a case which was first presented at my clinic Feb. 1, 1901:

Ruth M., aged 6 years, 3 months. Family history negative as far as diabetes, gout, tuberculosis and syphilis are concerned. Weight at birth 7 pounds. Was a healthy, plump infant.

Previous illnesses: Summer complaint at 10 months; whooping cough at 2 years, with protracted convalescence, since which time she has had occasional attacks of croup. At 5 years, chicken-pox. At 5½ years measles, from which time—April, 1900—she began to show nervousness, irritability, variable appetite, disturbed sleep and progressive emaciation. In August, it was noticed that she drank enormous quantities of fluids, to which fact her mother attributed the polyuria.

She entered school the middle of September, but was taken out after a few days on account of nervousness and frequent micturition. A physician was called and the child was treated for "nervousness and weakness," without improvement.

Status praesens: (Feb. 1, 1901.) On presentation to the clinic, the patient appeared undersized; weight 32 pounds; weak, anemic, with dry skin, harsh hair and carious teeth. Tongue red and clean, although there has been habitual constipation. Lungs and heart negative. No enlargement of liver or spleen. Very restless and easily fatigued. Extremely sensitive to cold. Pupils normal and no disturbance of vision. Patellar reflex absent. Blood examination showed 3,580,000 reds, 12,000 white cells and hemoglobin 85 per cent., notwithstanding pallor of the skin. Examination of 24 hours' specimen of urine; amount 84 ozs.; reaction acid; specific gravity 1028; thick cloud of albumin, sugar present, one drop giving marked reaction to Haine's test; no casts.

She was put on diabetic diet and pancreatic extract, with sodium salts for relief of constipation. A daily observation was made of the urine, the result of which is appended in the following table.

During the following 5 weeks the quantity of urine passed daily varied from 40 to 104 ounces; the difference in specific gravity, obtained by fermentation test, ranged from 13 to 32, the sugar from 1 1-12 to 6 3-12 oz. or from 2.99 to 7.36 per cent.

Although a grave prognosis was given, the parents were much encouraged by her temporary improvement in strength and weight. The regulation of her diet was but imperfectly observed, owing to parental indulgence, and at times the fluctuations in the urinary findings were coincident with lapses from dietary regimen.

On March 11, she contracted a cold from exposure and developed symptoms which a neighboring physician, summoned hastily, pronounced croup. I saw her the following day and found her with a subnormal temperature, rapid pulse and exaggerated breathing, with crowing inspiration, without cyanosis. There was slight delirium and restlessness, with intervals of partial coma, but no suppression of urine. The next day the crowing inspiration ceased, although the dyspnea became exaggerated. She developed the characteristic "dyspneic coma" in which she died March 14, 1901. No autopsy was allowed.

Date urine was passed.	Amount of urine in 24 hrs. Fl. oz.	Sp. Gr. before fermentation.	Sp. Gr. after fermentation.	Difference in Sp. Gr.	Amount of glucose in twenty-four hours.	
					Grains.	Fl. oz.
Feb. 3.	40	1028	1015	13	520	1 1/12
" 5.	40	1031	1010	21	840	1 3/4
" 6.	48	1031	1014	17	816	1 7/10
" 7.	64	1032	1008	24	1536	3 1/5
" 8.	48	1031	1009	22	1056	2 2/10
" 9.	48	1032	1010	22	1056	2 2/10
" 10.	80	1033	1003	30	2400	5
" 11.	48	1027	1010	17	816	1 7/10
" 12.	72	1031	1006	25	1800	3 3/4
" 13.	64	1035	1009	26	1664	3 7/15
" 15.	48	1032	1006	26	1248	2 3/5
" 16.	48	1030	1005	25	1200	2 1/2
" 17.	56	1036	1010	26	1456	3 29/120
" 18.	40	1034	1011	23	920	1 11/12
" 19.	72	1031	1002	29	2088	4 7/20
" 20	72	1035	1003	32	2304	4 4/5
" 23.	80	1034	1002	32	2560	5 1/3
" 24.	104	1031	1002	29	3016	6 17/60
" 25.	96	1030	1014	16	1536	3 1/5
" 26.	64	1031	1010	21	1344	2 4/5
" 27.	88	1031	1011	20	1760	3 2/3
" 28.	80	1035	1015	20	1600	3 1/3
March 1	64	1035	1015	20	1280	2 2/3
" 2	80	1010	1010	.	. .	. . .
" 3	56	1034	1016	18	1008	2 1/10
" 4	64	1032	1012	20	1280	2 2/3
" 5	64	1033	1015	18	1152	2 43/120
" 6	56	1033	1015	18	1008	2 1/10
" 7	56	1028	1014	14	784	1 19/30
" 8	88	1031	1012	19	1672	3 29/60
" 9	72	1032	1013	19	1368	2 51/60
" 10	64	1036	1011	25	1600	3 1/3
" 11	72	1031	1014	17	1224	2 11/20

How many physicians make the examination of the urine a part of the routine practice in the diagnosis of the disorders of childhood? The fact that analysis of urine is now recognized by the mass of the profession as an essential procedure in the examination of adults may help to explain the recent increase in the total number of diabetic patients reported. If this be true, it may not be unreasonable to urge that the well-known neglect to examine the urine of little patients may partially account for the seeming rarity of this disorder in young children.

The fatality of diabetes during the first decade of life should give to records of vital statistics significant value in estimating the prevalence of this disease in the very young. The essential objection to this method of determining its relative frequency lies in the fact above referred to., viz., the want of accuracy on the part of the attending physician in assigning the cause of death in his report to the registrar.

Most of our standard text-books agree in the statement that diabetes mellitus is rarely found in the extremes of life, but give no comparative figures.

Since vital statistics, as kept by our city health departments, seem to furnish the only information on this subject, the writer begs leave to quote from Dr. H. Stern's "Comments on the Official Records of Mortality from Diabetes Mellitus from the New York Health Department," and also from statistics from the Health

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Department of Chicago, furnished through the courtesy of Assistant Commissioner, Dr. Reilly.

MORTALITY STATISTICS WITH REFERENCE TO DIABETES MELLITUS IN CHILDHOOD.

NEW YORK FOR 11 YEARS, 1889-1899.

Total number of deaths from diabetes mellitus	1867
Average per annum	168+
Deaths under 1 year	4
Average per annum	16/44
Deaths under 10 years	24
Average per annum	2 8/44

AGE.	DEATHS.	PERCENTAGE.
Under 1 year	4	0.21+
Under 10 years	24	1.28

CHICAGO FOR 4 YEARS, 1897-1900.

Total number of deaths from diabetes mellitus	418
Average per annum	104½
Deaths under 1 year	3
Average per annum	33/44
Deaths under 10 years	15
Average per annum	3 33/44

AGE.	DEATHS.	PERCENTAGE.
Under 1 year	3	0.71+
Under 10 years	15	3.58

Total deaths from all causes	95,046
Total deaths from all causes under 10 years	37,498
Average deaths from diabetes mellitus (all ages) to total deaths	0.44 per cent.
Average deaths from diabetes mellitus under 10 years from diabetes mellitus	3.58 per cent.
Average deaths from diabetes mellitus in children under 10 years, to total deaths from all causes under 10 years	0.04 per cent.

ETIOLOGY.

Heredity.—That heredity plays a rôle in the predisposition to diabetes there seems to be little doubt, since its history or that of allied disorders, such as gout, tuberculosis and other diathetic disorders in the immediate or remote ancestry is found too frequently to be passed by as a mere coincidence. Thus, Frerichs notes hereditary influence in 10 per cent. of his cases. Seeger in 14 per cent., Bouchard in 25 per cent., as quoted by Von Noorden. Schmitz gives an analysis of 600 cases of diabetes in which 248 were hereditary. The late Dr. Purdy found heredity in 30 per cent. of his cases and states that he has seen diabetes appear in four generations. The same authority quotes Sir William Roberts, who speaks of a family of eight children, every one of whom became diabetic. Pavy mentions a family of seven, four of whom were diabetic. It is even claimed by some that diabetes may be congenital. In support of this, Ballantyne cites a case—reported by W. B. Bell—of glycosuria in an infant of 3 months with diabetic history. Ludwig, also, in 1895, refers to a case of a diabetic mother with saccharin hydramnion surrounding a dead fetus.

Somewhat closely allied to this form may be considered cases of congenital syphilis, in which diabetes may occur as an early complication. Such a case is reported by Lemonnier, in which the diabetes yielded after four months of anti-syphilitic treatment.

The term diabetes mellitus, like that of rheumatism, is employed to designate, not a single constant pathologic process, but probably a variety of deviations from the normal, in metabolism or in organic function. On this account it has been suggested that the name should be exchanged for one more expressive of the pathogenesis. In each instance the particular substitute would depend upon the favorite pathogenic theory of its advocate, whatever that might be, whether alimentary, hepatogenic, pancreatic, neurogenic, bacteriologic, toxic, or plasmolytic. Even though a number of widely differing, separate disorders may be found to have been included clinically under one term, as was formerly the case in "Bright's disease," it still remains that diabetes mellitus expresses the common, most prominent, most pronounced and demonstrated clinical feature of this protean disorder.

Infectious Diseases.—It seems to the writer that the inclination of many to attribute to the infectious diseases of childhood a causal relation to diabetes is not based upon careful analysis of the evidence. Von Noorden, Herrick and others state that an attack of an infectious disease is frequently accompanied by a disappearance of sugar from the urine of diabetics. The same phenomenon has been observed during an attack of jaundice in a child, and Terrien seems to prove in his experiments that the existence of acute gastroenteritis in no way diminishes the glycolytic function. Hence it is argued that a pre-existing glycosuria, discovered through the closer observation during retarded convalescence, may be wrongly attributed to the acute infectious diseases.

Transient Glycosuria.—Many observers admit that any one of the exciting causes may act to produce a transient glycosuria and that the patient, recovering from the disturbance, may subsequently, even after a period of years, develop a serious diabetes.

Dr. Eugene Terrien, referred to above, has found, by injections of sterilized sugar solution into the circulation, that the glycogen storage capacity of the tissues is relatively high in infants. From this it might be inferred that transient glycosuria, at least as far as it is dependent on over-ingestion of carbohydrates, would be of less frequent occurrence in infants than in adults.

SYMPTOMS.

Since the obese type of diabetes is practically unknown in early childhood, an advanced case presents, briefly, a picture of extreme inanition, emaciation, muscular weakness, dry skin and hair, brittle nails, extreme irritability and sensitiveness to cold. The especial symptoms, polyphagia, polydipsia and polyuria are always present.

According to Comby, furunculosis and other skin lesions, common features in adult diabetes, rarely appear in children. This same authority attributes the rareness of the complicating albuminuria to the integrity of the kidneys and greater suppleness of the vascular system in early life. However, in the case cited above, albumin was almost constant while under my observation.

Of the nervous and ocular symptoms frequently associated with diabetes, such as symmetrical neuralgia, neuritis, motor, sensory, trophic or psychic disturbances, amblyopia, cataract, iritis or retinitis, none were observed in the patient whose history is given, with the exception of the diminished knee-jerk and occasional transient pain in the legs and epigastrium.

The disease in childhood is essentially acute. Reports of cases that survive more than a few months are rare.

TREATMENT.

So long as the etiology, and even the pathology, is involved in the obscurity which obtains at present no routine treatment applicable to even the majority of cases may be formulated. Of the many drugs and remedial agents that have found advocates, such as

There are pre-glycosuric indications which should not be disregarded. Then there are attacks of transient glycosuria which should always be regarded with suspicion, for there are cases on record in which diabetes mellitus has developed even months and years after the appearance of a transient glycosuria. Until the lay mind is educated to the point of appreciating the true relation of the physician to the family, namely, that of conservator and supervisor, we shall not be able to make ourselves very useful in such disorders as diabetes mellitus in young children.

ALBUMINURIA IN DISEASE OF THE KIDNEY IN INFANCY AND CHILDHOOD.*

JOHN R. RATHMELL, M.D.

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CHATTANOOGA, TENN.

Diseases of the kidney in infancy and childhood are not so varied as in adults. They are chiefly active hyperemia and nephritis following the contagious diseases, especially scarlet fever. The acquired diseases of the kidney in childhood show considerable difference from adults, because acute affections, common to childhood, causing diseases of this organ, are seldom met with in after life. Under 15 years of age there is less likelihood to disorders of circulation than in later periods, and consequently under this age they are less likely to have chronic lesions of the kidneys.

Again, a child's kidney rapidly recovers from an injury. It is very rare to find a case of pyelonephritis, or hydronephrosis in children. But cachectic conditions lead to amyloid infiltration and this, in turn, to chronic albuminuria in children as well as in adults. Physiological albuminuria may occur at any period of infancy or childhood, but it is the most common between the ages of 5 and 15. The albumin is rarely present in the urine passed in the morning immediately on rising. Albumin alone being present, with an absence of blood corpuscles or other abnormal elements, indicates an absence of pathological changes.

While albumin in the urine does not, of necessity, indicate serious organic disturbances in the kidney, neither does it necessarily render the prognosis of a grave character, yet its presence, however slight, commands the utmost watchfulness and care before a decision is reached as to its being of no clinical significance. Albuminuria is the escape of serum-albumin and serum-globulin from the blood vessels into the renal tubes, and this escape of albumin indicates slight or grave nutritional disturbances. One is scarcely able, however, to certainly locate the site of these disturbances. For in each kidney it is estimated that there are about fifteen miles of tubing. This tubing is lined with basement membrane covered by epithelial cells of a variety of shapes and sizes. It is probable that the very shapes and sizes of the cells are accounted for, not by any peculiar function they each possess, but by the fact that they fill in the lumen of a tube that takes on the form, in quirk and curl, of almost every geometrical figure, from the capsule of Bowman to the excretory duct of Bellini. Yet it is thought that the columnar cells of the tubes of Henle select the urea, though this has not yet been certainly proved. While the tests for albumin and the use of the microscope will show disturbances, somewhere along the tubal track, yet nothing will appear that absolutely locates the lesion.

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The scheme given here has been of much use to myself in locating the first appearance of the trouble and in giving the causes. It seems to me that it covers the whole field, as follows: The nutritional disturbances lie in the epithelium lining of the glomeruli, the tufts of capillaries, and the uriniferous tubules.

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I desire to report the case of a child, where the cause of the disease is somewhat uncertain. Early in March, I was called in consultation to see a little boy 4 years old, who in development would ordinarily be taken to be 7. He had a very large head, large body and large limbs. At the age of 12 months, I was told, he weighed forty pounds. The history of the boy is that he was never sick until the beginning of this illness. He never had the diseases common to children, such as scarlet fever, measles, whooping cough, etc. The preceding Christmas time, he seemed to be indisposed and it was observed that his eyes and face and lower extremities were edematous. A physician was called and treated him for a few days, when the child apparently recovered. Two or three weeks later he became sick again, with the same symptoms. An examination of the urine showed the presence of a large quantity of albumin.

When I saw the patient, the albumin was about two-thirds of the bulk of the urine. The specific gravity was 1040, the color dark, and the amount plentiful. The temperature was normal, eyes almost closed from the swelling, the face also very much enlarged, and the feet, ankles and lower extremities very edematous. The abdominal cavity was ascitic, the hands and arms were swollen, while the pulse was fair but showed consider-opium, bromids, antipyrin, sodium salicylate, alkalies, etc., few, if any, have met with the approbation of more than a very limited number of clinicians. With perhaps the exception of opium, which seems to retard the progress of the disease, and alkalies to counteract the "acidosis" and impending coma, the benefits of drug therapy are admittedly restricted to rare, exceptional cases. Against the high rate of mortality from this disorder in childhood, the limited utility of opium affords but a modicum of encouragement as to help from medicaments. The prolongation of a life, with the establishment of the opium habit at its threshold, is not sufficient compensation.

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At the present time the regulation of diet seems to be the most important therapeutic measure and by far the greater number of important improvements have been attributed to diet.

That the severe form is the one most frequently seen in early childhood is acknowledged, and the rapid course of the disease, rarely influenced by therapy, is the experience of all. The death certificate follows hard upon the diagnosis. If from this gloomy outlook concerning the prognosis in early childhood there be one ray of light it seems to the writer that, for the present at least, it must be sought along the lines of prophylaxis.

It is now believed that diabetes, if not an hereditary disease, at least develops along the lines of a somewhat positive diathesis. To the extent that the function of the family physician is supervisory over his patients, may he hope to avert such disorders by controlling their development through attention to hygiene, in order that the young, whose immediate or remote ancestry show diabetes, gout, tuberculosis, neuroses, or even syphilis, should be sedulously guarded. Dietary errors, such as ingestion of food beyond the child's capacity for absorption and assimilation, preponderance of saccharin substances, as sweetmeats, confections and pastries, must be carefully avoided.

That the elimination in these little patients is of the utmost importance receives additional significance when we consider that some observations emphasize autoinfection and reinfection as an etiologic factor. It is of interest in this connection to mention that injection of feces as well as the urine of diabetic patients in lower animals will reproduce glycosuria. A thorough care of the digestive tract, including the teeth, is all important. So, too, the care of the skin and respiratory organs, that elimination by the former and oxygenation through the latter may attain the highest possible perfection. Adenoids should receive attention, as well as other evidences of lymphadenitis and struma.

Especially should we protect these children from mental strain, shocks, frights, trauma and exposure to inclement weather, since cases are reported in which the development of glycosuria was preceded by such disturbance.

In a child thus carefully observed, diabetes may be anticipated by the appearance of pre-glycosuric signs, such as incontinence of urine, muscular debility, irritability, with progressive emaciation in spite of voracious appetite, even though a single test of the urine fail to reveal sugar. The importance of an early diagnosis is evident, for it is admitted that success in treatment bears an inverse ratio to the previous continuance of the disease.

The utmost care of the diet and hygiene is even more important in children than in adults, since a higher ratio of metabolism is essential to growth in addition to repair. But the child will not bear radical dietary changes well. Hence, though so important, the reduction of carbohydrates should be gradual. The same may be said of the augmentation of fats, when indicated. Finally, too much stress can not be laid upon the importance of protecting the child from a sudden lowering of the temperature.

DISCUSSION.

Dr. C. F. Wahrer, Fort Madison, Iowa—When a school teacher, I had a peculiar pupil. He was a genius in spelling, but that was about all. He was finally apprenticed to a blacksmith. One day the boss sent him out to measure a wagon body, and the boy reported that its length was "8 feet 16 inches, and the length of the hammer handle, and so much," indicating a position on the hammer handle. This is about our position in regard to our knowledge of diabetes. I wish to speak in regard to a too emphatic treatment and dietary. Those who need the most enlightenment on this subject are, however, not the ones who come to these meetings, but those who stay at home and neglect even such simple measures as making analyses of urine. When young students in medicine we think we know something about diabetes. We have a few medicines which control the output of sugar in the urine, and perhaps also reduce the polyuria to some extent, but still we are unable to get at the root of things. Nearly all of these cases of diabetes mellitus die. I believe there are very few cases on record in which children under 10 years of age, suffering from true diabetes mellitus, recover. Why, then, take away from them the few things which they can eat and enjoy, and insist upon their eating things which it requires a strong stomach to digest. I do not condemn dietetic treatment by any means, but I object to the adoption of a routine treatment which may be more disastrous than the disease itself. Let us show mercy, and think carefully before we do things which are tyrannical or even cruel. I have a child who had scarlatina in connection with three of his brothers and sisters. The first child attacked was extremely ill, but the child I am thinking of was only moderately sick. All of these children made a very fair, and I may say, an uneventful recovery. This child was a boy who, with the exception of a tendency to obesity, was healthy in appearance. In the early part of August it was noticed that he often arose at night to go to the water closet. For a few weeks I paid no attention to this report, but then an analysis of the urine showed over 5 per cent. of sugar. I corresponded with many medical men, but received no more light than we have to-day. The case terminated fatally without any severe manifestations of the disease aside from those referable to the urine. Two weeks before death the boy enjoyed greatly a hunting trip, but he suddenly became very ill after it, and died after three days of diabetic coma.

Why diet and treat so radically that which we do not understand? Many who take no treatment whatever live just as long as others do. I do not want to disparage conservative treatment.

Dr. Cotton, in reply—Of course, there is much that might be said on this subject, for no doubt we have all had interesting individual experiences. I must say that I consider myself somewhat of a failure in the effort to arrest diabetes in children. The dietetic theories which have been advanced are quite confusing, but I am convinced of the importance of watching diabetic children.

The authorities quoted in the paper seem to me to show very clearly their belief in hereditary tendencies. Thus Purdy asserts that he is satisfied that he has found a hereditary element in fully 30 per cent. of cases. If the true function of the family physician ever comes to be fully realized, and he becomes medical supervisor of the family, he must take into consideration everything which shows a predisposition to diabetes. In this way it is not improbable that he may prove of great value in stopping diabetes before it has become thoroughly established.

There are pre-glycosuric indications which should not be disregarded. Then there are attacks of transient glycosuria which should always be regarded with suspicion, for there are cases on record in which diabetes mellitus has developed even months and years after the appearance of a transient glycosuria. Until the lay mind is educated to the point of appreciating the true relation of the physician to the family, namely, that of conservator and supervisor, we shall not be able to make ourselves very useful in such disorders as diabetes mellitus in young children.

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When I saw the patient, the albumin was about two-thirds of the bulk of the urine. The specific gravity was 1040, the color dark, and the amount plentiful. The temperature was normal, eyes almost closed from the swelling, the face also very much enlarged, and the feet, ankles and lower extremities very edematous. The abdominal cavity was ascitic, the hands and arms were swollen, while the pulse was fair but showed considerable arterial tension. There was considerable loss of strength, and a great loss of red blood. In fact there was present the condition known as the "alabaster cachexia."

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* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Diseases of Children, and approved for publication by the Executive Committee of the Section: H. E. Tuley, Edwin Rosenthal and Samuel W. Kelley.

The diet in this case was nothing but sweet milk as long as he could take it, but after awhile his repugnance to milk became so great that he could scarcely swallow it. Then some stale bread was put in the milk, and he was also allowed some fruits in the form of oranges and lemonade. In some types of albuminúria, white meats may be given, namely, fish, chicken, turkey, sweetbread, birds, etc. In the way of vegetables, spinach, oyster plant, parsnips, etc., may be allowed. In the way of fruits, stewed apples, prunes, pears and peaches are sometimes used. But milk, two or three pints daily, is the food *par excellence.*

By way of treatment in this case, the wet pack, epsom salts and cream of tartar, a solution of the citrate of magnesia and vichy water, also a solution of the lactate of strontium, and Basham's mixture were used. The albumin ran from 1 to 2 per cent. In ordinary cases it runs from only 0.16 to 0.5 per cent. The specific gravity continued at 1040. The scrotum and penis were edematous to a very great degree. The eyes remained puffed and the arterial tension high. From time to time the urine was examined microscopically and pus, blood, and a few epithelial and hyaline casts were found. The history and progress of the case pointed to a chronic parenchymatous nephritis, immediately following an acute nephritis, a condition rarely found in children. This child died about ten days thereafter, from uremia and pulmonary edema.

Another case in point is that of a little boy 5 years old. His home was in Lookout valley. He had whooping cough the winter previous to my seeing him in July. The disease left him with albumin in the urine, in large quantities. I was called as consultant in July and found him in the home of his brother, a physician on Lookout Mountain, about 20 miles from Chattanooga. He had been carried thither by his parents, who hoped that the change, from the valley to the top of the mountain, would improve his condition.

He was very edematous over the entire body. The penis and scrotum were enormously swollen. He was voiding but little urine, which was heavily loaded with albumin and of a high specific gravity. The heart was weak but not diseased, the breathing shallow, and he was able to take but little nourishment of any kind. His principal longing was for fruit. The attending physician had used the customary means of treatment, excepting the hot wet pack. This was recommended by me, as was the use of the solution of the lactate of strontium, which was given in as large doses as the child would bear. Another suggestion was also carried out, and that was to take the child back to his home in the valley, thus hoping to give the skin a chance to aid in reducing the accumulated fluid. After taking him home, the attending physician reported that improvement began promptly and recovery rapidly ensued. After six months he told me that his little brother had fully recovered so far as he was able to discern.

The prognosis, in both of these cases, was grave on account of the aggravated symptoms and the age of the patients. They are of interest, however, in that the general symptoms and age were about the same. But in the one case the cause of the kidney involvement could not be determined, while in the other the cause was attributed to the whooping cough. In the first case, however, we might ascribe the cause to cold and wet weather, but it has been observed that exposure to inclement weather very rarely gives rise to acute degenerative nephritis.

As the prominent symptoms in these cases are albumin, high specific gravity and edema, I want to state that these symptoms are especially found in interstitial and chronic parenchymatous nephritis, active hyperemia, catarrhal nephritis, parenchymatous degeneration, passive hyperemia, and acute nephritis. In acute nephritis the amount of albumin depends upon the extent of involvement of the glomeruli, and the amount of casts depends upon the extent of the tubules affected.

A word about edema in renal disease. As this is a common symptom, it has always puzzled me to explain, to my own mind, the cause of its presence. Edema is the accumulation of watery fluid from the blood vessels, into cellular tissues and lymph spaces. Several theories have been advanced in explanation of this. 1.—the original theory was that, because there is an accumulation of the daily quantity of urine, the tissues are saturated with the water not excreted by the kidneys. 2.—Edema is the cause rather than the result of diminution. 3.—Transudation is due to the changes in or injury to the endothelium, increasing the perviousness of the blood vessels. None of these theories are fully tenable because the etiology and pathology of edema have not been satisfactorily explained. Hence, another theory was pronounced by Landerer, which is, that the relaxation of the tissues and loss of elasticity prevent the forcing of natural lymph into circulation, and as a result, a watery infiltration of the tissues ensues.

To meet and treat the symptoms of edema and ascites requires some thought concerning the condition of the patient. Of the three kinds of expellants, namely, diaphoretics, diuretics, and cathartics, the latter are indicated when general edema and threatening uremia exist. They are more certain in their action. Podophyllin, 1-10 grain, may be given repeatedly to a child 5 years old. Compound jalap powder, 5 to 10 grains, may also be used. A bath, 105 to 110 F., with the child wrapped in a woolen blanket, may be given for fifteen or twenty minutes. Then remove the child, take off the wet blanket and wrap in dry, hot blankets until reaction sets in. You may also add muriate of pilocarpin, in doses of 1-20 of a grain, by the mouth, to a child of 2 years, or hypodermically, to one 5 years old. Where ascites is extreme, tapping is of value. Teaspoonful doses of infusion of digitalis, every four hours, to a child 5 years old, is best.

TRAUMATIC AFFECTIONS OF THE UVULA

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From its peculiar position in relation to the oropharynx the uvula would appear to be extremely susceptible to severe traumatic influences, as it is constantly subjected to minor traumatisms in deglutition and excessive vocal efforts, yet reported cases of damage to this portion of the pendulous palate are comparatively rare, the text-books containing little or no reference to traumatic affections. The anatomic structure of the uvula, and its mobile characteristics, render it to a great degree exempt from traumatism otherwise affecting the tissues in its immediate proximity. The mucous membrane covering it, especially at the tip, is of firmer consistency than that of the surrounding tissues, and is also less dense in structure. As an additional protection against damage from the lodgment or impact of foreign bodies, is the absence of glandular stomata or crypts, as occur on the pharyngeal walls and tonsils.

Pathologic alterations of the contour and structure of the uvula, as the result of traumatic influences, may best be classified from an etiologic standpoint, and may be divided into five classes. The first being extensive injury, the result of forcible contact with resisting foreign bodies, the soft tissues of the uvula being caught between the foreign body and the pharyngeal wall; the second class embraces those cases in which the mucous membrane is pierced by a minute body, such as bristle or stiff hair; the third class embraces the more frequent cases in which, as the result of swallowing caustic materials, and also in the application of caustics to adjoining regions, the uvular tissues become subjected to chemical traumatism. The fourth class is seen in accidental cases, in which this portion of the palate is subjected to traumatism as the result of operative procedures directed to the tonsils, larynx or nasopharynx, the uvula accidentally becoming engaged in the handle of the forceps, or whatever instrument of similar nature is being used. The fifth class results from indirect traumatic influences, being by far the most important from the standpoint of the individual as it occurs in singers as the result of excessive or ill-advised efforts at vocal exercise.

As illustrative of the amount of damage that may be done to the uvula as the result of forcible contact with a hard, resisting foreign body, the following case is presented:

C. J., a colored male, aged 30 years, was seen Feb. 23, 1899, when he presented the following history: While under the influence of alcohol and smoking a corn-cob pipe, he ran against a stone wall, on the evening previous to which he was seen. The stem of the pipe was violently forced into his throat and severe pain and bleeding ensued, lasting the entire night. The pain was intense, referred to the base of the tongue and pharynx and presented the taking of food, either solid or liquid; even the mere act of swallowing being impossible on account of the increase of pain produced at such times. The pipe had been held on the left side of the mouth and examination showed a deep laceration on the same side of the tongue and, after inflicting this damage, the stem of the pipe had evidently passed backward and jammed the uvula against the posterior pharyngeal wall. The uvula was perforated directly in the median line, 2 millimeters below its junction with the soft palate, the perforation being partial inasmuch as it did not go through the mucous membrane of the posterior aspect and corresponded in shape and size to the stem of the pipe. Inflammation and edema were severe and prevented to a great extent the opening of the mouth, but hemorrhage had spontaneously ceased. The parts were painted with ichthyol and an astringent mouth wash given, with prompt relief in a few hours, patient making uninterrupted recovery in a few days.

It is of interest to note that in cases of severe traumatism of the uvula edema is not as well marked as in apparently more trifling injuries, scarification rarely being necessary, as free bleeding has already taken place and the amount of swelling is limited. Another point of interest is the rapid improvement without the least suggestion of septic infection, following the use of antiseptic and astringent applications. It is also remarkable in the cases of severe local injury with what rapidity the healing of the lacerated or punctured wound takes place; this case, being typical of its class, well shows this marked recuperative power, as in forty-eight hours after the patient was first seen all the symptoms had disappeared and but slight congestion remained around the wound.

Of more frequent occurrence than severe lacerated or punctured wounds of the uvula are the minute lacerations of the mucous membrane, and oftentimes of the deeper structures, as the result of small foreign bodies, such as a bristle from a tooth-brush, etc. Belonging to this class is a case reported by Fisher,[1] in which the uvula was pierced by a bristle; severe hemorrhagic infiltration occurred, the uvula being greatly swollen and dark purple in color from the large amount of blood effused into the tissues. Small foreign bodies producing traumatic injuries of the uvula may induce pathologic alterations seemingly out of all proportion to their size. When the foreign material, such as a minute fish bone, merely enters the surface epithelium and does not penetrate into the deeper tissues a slight grade of inflammation results, dependent on the length of time the foreign body remains *in situ*, and then rapidly disappears without further treatment as soon as the offending particle is removed. The subjective symptoms are, however, most annoying, as the patient complains of the presence of a foreign body even for a considerable time after all traces of it have been removed, and the dysphagia, peculiarly, is very rarely referred to the uvula directly, but most frequently to the tonsillar or epiglottic regions. The characteristic features predominating, when a minute sharp-pointed body enters deeply into the uvular structures, are edema and extravasation of blood. The uvula becomes enormously increased in size and, as a rule, hemorrhagic extravasation of the uvular tissues is nearly always of traumatic origin.

The general symptoms of the varied traumatic inflammations of the uvula are, in the majority of cases, not well marked, except when the traumatism is severe, when the inflammatory reaction involves the adjacent parts by continuity of structure and pharyngitis results, attended with a moderate degree of temperature, such as occurs in the regular course of acute non-specific inflammations of this particular region. Within a few minutes or hours after the infliction of the injury, and dependent upon its extent, the patient complains of a sense of pharyngeal discomfort, which may in severe cases, as in the one reported here, amount to intense pain. The pain is constant, but becomes markedly exaggerated during deglutition, and food is refused for a limited time until the acute symptoms subside. Dependent on the amount of edema and inflammatory reaction are the changes in the voice. The functions of the uvula are for the time abolished, the resonating capacity of the parts is impaired, and articulation becomes thick from the swelling of the uvula and from the increased amount of mucus collecting in the oropharynx, due to indirect stimulation of the secretory glands. On account of the increased amount of saliva and mucus, there is a constant desire to swallow, this also being enhanced by the sensation of the presence of a foreign body which seems a constant local symptom in practically all cases. This foreign body sensation, in a few instances, may be due to the presence of a minute particle of adventitious material partially embedded in the mucosa and, from the constant motion and enlargement of this part, the tissues in its immediate locality are irritated by the foreign matter abrading their surface with every act of swallowing, thus keeping up the inflammation. In the majority of cases, however, this is but a nervous element, but in all, careful search under good illumination should be made, and any adventitious material immediately be removed.

Dyspnea only occurs when the tissues are enormously increased in all their dimensions by the effusion of blood or serum into the structure of the uvula; it may be extreme, requiring immediate operative procedures, as in a case reported later in the course of the paper, and is also present in the class of cases where the traumatic influences are indirect, as in excessive vocal strain. The non-appearance of dyspnea, when the uvula is subjected to direct and severe traumatism, is readily explained by the laceration of the tissues as a result of the foreign body, allowing the fluids to escape, and in this manner excessive infiltration by liquids is prevented. Cough is not as commonly present as the other symptoms mentioned, and is rarely complained of when the parts are edematous, as in this condition the increase in the size of the uvula is one of bulk, that is, in the lateral direction, while the cough factor depends on the elongation of the tissues and the contact of its tip with the epiglottis. When cough is present, however, it is of an irritating, tickling variety and promptly disappears on the application of an astringent, so as to draw the elongated uvula away from the larynx or base of the tongue.

Acute uvulitis, characterized by the presence of a considerable amount of local edema, may result from the inadvertent swallowing of boiling water, acids, ammonia or any chemical irritant, the uvula participating in the general inflammation of the oropharynx. Cases in which the traumatic effects of irritant chemicals are alone limited to the uvula are much more frequently observed, and occur as the result of ineffectual or unskilful attempts to cauterize the adjoining tissues for therapeutic purposes. Under these circumstances but a limited portion of the organ is involved, although the resultant edema and inflammatory reaction is far in excess of the amount of damage inflicted. J. Solis-Cohen[2] reports a case where caustic applications produced an intense edematous condition of the uvula, and numerous other cases similar in character have been recorded in the literature. The loose structure of the upper two-thirds of the uvula, like that of certain portions of the larynx, renders it susceptible in a marked degree to the action of caustics, and it is surprising in what a short period of time, after a minute amount of caustic material has been inadvertently applied, the edema develops.

Injuries, the result of carelessness or accident during operations on the pharynx or larynx, are of more or less frequent occurrence, especially when the electrocautery or tonsil snare is used without proper precautions as regards the protection of the surrounding tissues. The resultant burn differs but little from that due to the action of chemical caustics when the traumatism is the result of the careless application of the electrocautery, while minor wounds due to catching the uvula in the joints of instruments are usually of little moment, except as they to a moderate degree augment the inflammatory reaction and for a short time cause the patient added discomfort. Objectively, when the uvula is injured by being caught in instruments during operations in this locality, we find a small laceration or bruise of the mucous membrane the most common feature, while traumatic ulcers the result of caustics are apt to develop in a few days after the injury has been inflicted, but readily heal under appropriate treatment. The liability to local and circumscribed sepsis after the infliction of this class of injuries upon the uvula, seems to occur more frequently than as the result of other forms of traumatism, as the injury, when due to instruments, is usually of a contused and lacerated variety and the resultant ulcer develops as the result of septic infection through the buccal cavity. Especially is this noticeable should the patient have decayed teeth and the parts be not thoroughly cleansed, as is frequently the case, before any operative procedures are instituted.

The first four varieties of traumatism, to which the uvula may be subjected, are all the result of direct violence to this portion of the oropharynx, while the fifth form results indirectly from excessive strain of the parts and the symptoms are out of all proportion to the apparent amount of injury inflicted, the ill-regulated column of respired air and the irregular muscular action combining to produce this variety of indirect traumatism. The following case illustrates in a forcible manner this form of traumatism, and is reported by Le Jeune[3]. He was hastily summoned to see a female singer, who was supposedly choking to death. The intense dyspnea came on after she had been singing for a time and immediately followed extreme and prolonged efforts to reach a note beyond her compass. The subjective symptoms were dyspnea, with the sensation of a foreign body in the throat. The uvula alone was affected and was of a dark purple hue and the size of an olive. Incision was immediately made, and gave exit to blood, which had extravasated into the tissues of the uvula; immediate relief was given the patient.

In a similar manner small submucous ecchymoses are produced by excessive and violent efforts to clear the throat, as in the act of hawking. The effects of this form of traumatism upon the voice, both singing and speaking, is marked; the range is lost, as is also the clearness and strength, and often it becomes tremulous until the uvula regains its normal tone.

No special forms of treatment are indicated when the uvula suffers as the result of traumatism, but when the tissues are lacerated, the local application of ice is most gratifying in conjunction with antiseptic and mild astringent applications. While in inflammations the result of inadvertent applications of caustics or instruments in operative procedures, bland soothing applications are valuable, such as ichthyol in weak solution. When edema is extensive, or the parts much enlarged from hemorrhage into the tissues, and dyspnea becomes imminent, multiple incisions promptly relieve all threatening symptoms and the uvula rapidly regains its normal size.

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Clinical Reports.

TWIN CONCEPTION.

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The lady referred to in this report is a Virginian, white, 42 years old, married eighteen years; has had seven pregnancies to the full term, all of the children living, and three miscarriages at two, four and six months. She was taken unwell on

November 29 last, and the usual symptoms of pregnancy progressed without incident until May 30, when she felt a sudden gush of water from the vagina, followed by quite a severe hemorrhage. I confined her to bed for ten days, and there being no further symptoms she got up and went about her usual household duties. On July 4, she had two sharp pains in her abdomen and went to the closet to relieve her bladder, when in her words, something passed from her, but was not detached, and, being afraid to pull on it, she supported it to the bed, where I found her about half an hour later. I found a fetus expelled and cord attached; used gentle traction and then quite forcible traction, without result; introduced my finger and found os sufficiently dilated to introduce three fingers, and felt head of living child: followed the cord along the right side of uterus as far as my finger would reach, and, finding no attachment, used considerable force and detached the cord. There was no hemorrhage, no discharge, no pain; in fact, no symptoms. I kept the patient in bed. The fetus was about three months growth; genitals sufficiently developed to distinguish the sex (male); head about the size of tennis ball, and compressed flat. There was no decomposition, no maceration. It looked as if it had been immersed in alcohol.

On July 7, the mother was delivered of a seven-month girl after a normal labor. After delivering the placenta, I introduced my hand, but found no second placenta. After washing the placenta I found a portion of it, outside the membranes, as large as my hand, presenting the same appearance as the expelled fetus. There is no doubt in my mind that this was a twin conception, and not a superfetation, for there was only one placenta. The mother made an uneventful recovery; the child is well and growing.

A CASE OF PRIMARY RETROPERITONEAL SARCOMA.

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The following case of retroperitoneal sarcoma is reported because of its rarity. The extremely softened condition of the tissues was unusual, perhaps unique. In Steele's[1] summary of the literature of the subject he found 22 cases, or 35 per cent. of the total number of cases reported were cystic, and in 15 of the 22 the degeneration a hemorrhagic one, the center of the softened growth being filled with a dark brown fluid or semi-fluid material. This softening was so extreme in the case here reported as to make it impossible to name its exact origin. That it started in the upper retroperitoneal space was apparent. The case also presented many of the objective symptoms of a pancreatic cyst, which makes the case of interest in considering that affection.

T. A. D., male, aged 27, farmer, gave no history of syphilis or gonorrhea. He had good health until the spring of 1900, when the left scrotum gradually became swollen, and in August it was tapped and fluid removed by Dr. Asa L. Taylor, his family physician. After this, the hydrocele filled again and then the fluid disappeared spontaneously. In September the patient began to have pain in the hypogastrium; anorexia, distress after eating, belching of gas and occasional constipation occurred, and he had to give up work. Dr. Taylor, who examined the abdomen several times at the beginning without finding anything abnormal, on November 10 noticed a tumor, which increased rapidly in size up to the time of operation, November 30. One week before operation the patient became jaundiced, this condition increasing rapidly. The stools were clay colored and the urine very dark. He vomited several times in the three weeks previous to operation and the pain in the hypogastrium was quite severe.

Examination.—Man of fairly good physique, fairly well nourished, severely jaundiced and no marked cachexia present. The examination of the heart and lungs revealed nothing abnormal. Pulse ranged between 70 and 80, and temperature between 99 and 100. Examination of scrotum shows right testicle much smaller than usual, but otherwise apparently normal. Patient thinks it has diminished in size since last summer. Left scrotum evidently contains some fluid and the epididymis feels hard and nodular but not enlarged. Abdomen is flat. Just above navel and to the left is a slight bulging. A tumor can be distinctly felt here extending slightly below, two inches to the left of the median line and about an inch to the right. It is globular, fairly hard, non-fluctuating but slightly tender; does not move with respiration, and is tympanitic on percussion. Its most prominent portion seems to be just above and to the left of the umbilicus. Tumor shelves off rapidly into the depths of the abdomen. Liver and spleen dulness normal. Exploratory operation advised.

Operation.—Abdomen opened by vertical incision an inch to the left of the median line, extending one and a half inches above and the same distance below the umbilicus. The omentum presented, seemingly very much engorged with blood. The transverse colon lay just below the most prominent portion of the tumor. In attempting to get down to the tumor, the hemorrhage was profuse: then there was a sudden welling up of blood from the depths. The transverse colon and omentum were pushed quickly upwards and the tumor gotten at from below. It was seen that the blood came from a hole in the tumor, the thin walls of which were grasped and drawn through the incision. The hemorrhage had been profuse and it was some minutes before it was controlled by packing. It was not deemed advisable to attempt to bring the sac through the mesentery on account of liability to hemorrhage, and it was stitched to the abdominal wall, the omentum and transverse colon being pushed upward. The sac was packed with gauze. The patient was severely shocked, from the severe loss of blood, but rallied within a few days. Bile passed with the first movement of the bowels and jaundice disappeared completely in about two weeks. The general condition seemed to improve for a while, but the improvement was only temporary. He lost flesh rapidly and died four weeks after operation. The emaciation towards the last was very rapid. About two weeks previous to death, there appeared a bulging just above the incision. This pushed forward with remarkable rapidity, finally pushing the sac from the abdominal wall where it had been stitched and at death presented at least two inches above the surface of the abdomen. The mass oozed blood almost constantly, and in the last two days in large amounts. Patient complained a great deal of severe pain in the back for the last two weeks. Bowels were moved with great difficulty.

Postmortem.—Lungs and heart presented nothing abnormal except some fresh adhesions about the base of the left lung. The tumor mass projecting above the surface of the abdomen consisted of semi-solid material, mostly blood-clots, and a gray, mushy, partly organized material throughout. This mass occupied a cavity running back to the spine, then upwards, filling the left renal space and pushing the kidney outward and extended down to Poupart's ligament. It was surrounded everywhere by intestines firmly agglutinated but apparently not involved. The transverse and descending colons were pushed upward and outward against the wall of the abdominal cavity. In the structure of the left testicle was a small hard mass, which was removed for examination.

Report of Pathologist.—Organized pieces of the tumor were removed from several parts of the growth. Sections of some of these presented the appearance of a small round-celled sarcoma with a small quantity of stroma. In other sections taken from near the periphery there was much more fibrous tissue and many blood vessels. The tumor may be classed as a small round-celled sarcoma undergoing degeneration, which is so frequently met with in this class of malignant growths.

The nodule removed from the testicle was examined and found to be composed of fibrous tissue. There was no evidence of its being associated in any way with the abdominal growth.

Professor Howntze, a Danish physician, stated at the Congress of Scandinavian Surgeons, that he had cured several cases of cancer by freezing them.

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[1] Steele: Am. Jour. Med. Science, March, 1900.

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THE NATURE AND THE CAUSE OF PUERPERAL ECLAMPSIA.

At the Ninth Congress of German Gynecologists at Giessen, May 29-31, 1901, eclampsia constituted one of the subjects for an exhaustive general discussion, which was introduced by Fehling and Ryder.[1] Inasmuch as this discussion probably represents quite fully the present views concerning the nature and cause of eclampsia it may be of some interest to briefly review the principal facts and opinions brought out.

In his report on the pathogenesis Fehling announced the following theses: Puerperal eclampsia is a distinct and characteristic process, which occurs only in the period of gestation. There is no special form of placenta, no special form of renal or hepatic disease in eclampsia; it is not necessarily connected with ureteral dilatation, but albuminuria is almost always present. There is no definite pathological anatomy of eclampsia. That it is contagious has not been shown, and there is no proof of Bouchard's claims that it is caused by an increased toxicity of the plasma of the blood associated with diminished or absent toxicity of the urine. Eclampsia is neither an hepatotoxemia nor a leukomainemia. The lesions of eclampsia are associated with the presence in the blood of some coagulative substance. Finally, eclampsia is an intoxication of fetal origin.

A very important contribution to this discussion is Schmorl's report on the pathological anatomy based on a thorough study of the organs in no less than 73 cases. From the results Schmorl finds that the process has a fairly definite pathological anatomy, thus invalidating one of Fehling's theses. When the whole complexus of morbid changes are considered one must agree with Schmorl. The kidneys without exception are the seat of albuminous and fatty degenerative changes with more or less necrosis. These changes affect the secreting tubules and occur in varying degrees of extent and intensity. Thrombosis is frequent in the glomerular capillaries, as also in the arterioles and veins. Ureteral dilatation is of no greater frequency than in the non-eclamptic. In three cases there were hemoglobin infarcts and hemoglobinemia, but the exact cause could not be determined. In the liver there are albuminous changes in the cells, and hemorrhagic and anemic necrosis were present in 71 cases. In the two cases in which they were absent there was total thrombosis of the main stem of the portal vein. These necroses, when small, are situated in the peripheral parts of the lobules and invariably accompanied with thrombosis of the inter- and intra-lobular capillaries and often also of the larger vessels. The necroses do not stand in any relation to the severity of the symptoms, and they are not due to traumatism during the convulsion, because there may be very few in cases with many and severe convulsions and very many in cases with few and light seizures. In addition to secondary pneumonic processes, the lungs showed thromboses and hemorrhages in 66 cases. Fat embolism was also frequent, the source of the fat being, it is thought, the bone marrow, the subcutaneous tissue and possibly also the fat tissue in the pelvis. The most constant changes in the brain are small softenings and hemorrhages, especially in the cortex, but also in the brain stem and in the lenticular nucleus. Thrombosis and possibly increased blood pressure during the convulsions are regarded as the cause of these changes. In the heart are degenerative changes, hemorrhages, necroses, and thrombi, but the latter are not as common as in the other organs.

Schmorl does not attach any special importance to embolism of parenchymatous cells in eclampsia. Even placental cell embolism are not distinctive because it occurs in non-eclamptics. Schmorl is no longer disposed to attribute to placental cells the ability to liberate coagulative substances. He has not seen any other disease with the complexus of changes outlined in the foregoing. While no single lesion is absolutely characteristic or pathognomonic, the sum total of all the changes is as distinctive as in many other diseases. From the nature of the lesions he would assume that a peculiar substance enters the blood and leads to multiple thromboses. Whether this substance comes from the placenta or from the fetus can not be settled at this time. Possibly the applications of the principles of cytolysis may throw some light upon this dark problem.

It is regrettable that careful and complete systematic bacteriologic examinations do not accompany this valuable report which is based upon such a wealth of observations. The relations of bacteria and bacterial products to thrombosis are of such importance that they surely merit consideration in connection with eclampsia; and the clinical picture and pathological anatomy of eclampsia do not of themselves definitely exclude a microbic etiology. Indeed, Albert advances the theory that eclampsia is a microbic intoxication from the decidua.

Strassmann deals with the question of the why and the when toxic substances are retained in case eclampsia is a toxic disease. Kundrat and after him Herzfeld advanced the theory that abnormal divisions of the abdominal aorta may result in such displacements of the ureters as to subject them to compression. The frequency of eclampsia in primiparæ and in twin birth, in contracted pelvis, and the fact that the attacks may cease after delivery, point to the influence of mechanical conditions. He could not find, however, after an exhaustive investigation, any relation between puerperal eclampsia and anomalous division of the aorta.

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[1] Report in Centralbl. f. Allg. Path. u. Path. Anat., 1901, xii, 635-648.

In the same discussion considerable reference is made to physical and chemical conditions of the blood and urine in eclampsia. Füth and Krönig found that the maternal and fetal blood have the same osmotic tension and specific gravity, showing that if there are toxins in the maternal blood they do not cause increase in its tension or its gravity. Dienst observed an increased amount of fibrin in both the bloods in pregnancy, and he assumes that during pregnancy a certain amount of poison is produced in the fetus and taken into the maternal blood where it may accumulate in fatal quantities in case elimination is interfered with. Schumacher established that the urine of eclamptics is no more toxic than normal puerperal urine of the same concentration. He regards the toxicity of eclamptic urine when concentrated as dependent entirely upon its hemolytic properties due to its different tonicity from that of the serum of the blood. Schroeder notes that the freezing point of urine in eclampsia falls below healthy urine and sometimes below that of the blood. As the attacks pass away concentration increases, but the observations are not sufficiently extensive to permit any definite conclusions. In connection with this question reference may be made to the article by Stern[2] in which he discusses osmotic pressure in its relation to uremia.

Veit did not find the maternal serum hemolytic for the blood cells of the fetus nor the fetal serum lytic for the maternal corpuscles. By inserting syncytial cells from the rabbit into the abdomen of geese the serum of the geese acquired the power of dissolving the placental cells of the rabbit—a placentolysin or syncytiolysin developed. Normally but few syncytial and placental cells enter the maternal circulation; should a larger number enter, lysins with toxic properties might develop, but Veit adduces no further evidence in favor of this idea.

Taking it all in all we must admit that eclampsia is a toxic disease in which coagulative substances exist in the blood, but the source of these substances has not been determined. No decisive proof is at hand to the effect that the intoxication is of fetal origin.

NOCTURNAL ENURESIS IN CHILDREN.

Incontinence of urine may result from a variety of causes, but the principal and underlying factor resides, of course, in a relative or absolute weakness of the sphincter of the bladder. This may at times be in a sense conservative, as in the so-called incontinence of retention, when the bladder having become filled and distended to its utmost, the sphincter yields, and urine escapes. Irritation of the walls of the bladder in consequence of inflammation, the presence of new growths or foreign bodies, excessive acidity of the secretion of the kidneys, may result in involuntary discharge of urine. This may take place, further, during states of unconsciousness—even during sleep—and in the presence of various diseases of the nervous system, partly as a result of indifference and partly as a result of anesthesia or paralysis. The control of the urine is a voluntary function, and it is developed in a growing child as volition is evolved—sometimes earlier, sometimes later, in accordance with individual conditions and training.

There is reason to believe that the involuntary discharge of urine that takes place during the night, and sometimes also during the day, in some children, at a time when control of the sphincter of the bladder has usually been acquired, is a neurotic manifestation involving the sensibility of the mucous membrane, or the motility of the muscular coat of the bladder, or both, and Dr. Martin Thiemich[1] expresses the opinion that the disorder is of hysterical origin. He points out that the peculiarity of hysteria in children is its monosymptomatic character. From the study of a considerable number of cases he found that the majority of children suffering from enuresis were the offspring of neurotic parents, so that both heredity and environment contribute to the development of the neurosis. In fact, in many cases a history of enuresis in other members of the family could be elicited. Further, the involuntary discharge of urine not rarely becomes attended with or replaced by other symptoms of hysteria. Finally, the epidemic occurrence of enuresis, in schools and the like, is not unknown, and the best remedy under such circumstances has consisted in isolation.

Neither is the treatment generally employed opposed to the hysterical origin of enuresis. In this connection suggestion plays an important rôle, and mechanical or physical measures—especially the application of the faradic current—are more efficient than medicinal measures. A strong current to the point of causing pain should be employed, and it is a matter of indifference where the electrodes are applied, although it is customary to apply one in the neighborhood of the bladder. Subcutaneous injections of strychnin may likewise be employed, and be made either in the vicinity of the bladder or in some indifferent situation. Adenoid vegetations in the nasopharynx should, if present, be removed, and any local condition, such as preputial adhesions, hyperacidity of the urine, and the like, should be corrected.

THE MULTIPLICATION OF BOOKS.

On account of the rapid increase in the number of books the large library in Paris has been forced into new and larger quarters in order to find room for the rapidly accumulating literary treasures it is intended to house, classify and arrange in an accessible manner. The librarian is reported to have stated that it is becoming a more and more serious problem to properly house and arrange the books. If the present rate of increased production continues it will be but a short time before still larger quarters will be absolutely essential. He emphasizes particularly the difficulties of classification and practical arrangement. The overproduction is so excessive that the large libraries are threatened with perpetual and hopeless chaos in their efforts to make the vast accumulations accessible to their patrons. The transitory character and even absolute worthlessness of a large proportion of the publications are pointed out, and the remedy suggested is that writers restrict their production to the greatest possible minimum. The real literature is on the point of being buried beneath a mass of cheap trash. "One can not see the woods for trees."

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[2] THE JOURNAL, July 27, 1901, p. 256.

[1] Berlin.-Klin. Woch., 1901, No. 31, p. 808.

This excessive literary production is characteristic also of medicine. The number of journals, of reprints, of books, and of printed matter issued from various sources is simply overwhelming. The transitory nature of the larger part of this material is so apparent as to need no emphasis at this time. Real, honest literary study of a fairly popular topic in current medical literature is rendered exceedingly irksome and laborious, because of the vast quantity of rehash and compilation without the addition of a single original idea or suggestion. It is practically out of the question to be in touch with all the literature issued in any one department of medicine, because of the expense and time it would involve to attempt to master the stuff sufficiently well to separate the wheat from the chaff. Not only are lengthy articles produced in large numbers, but they are frequently printed in two or three different places and reappear again and again under various disguises and modifications.

All sorts of medical societies attempt at great expense to issue some form of transactions or proceedings in which they too often simply reprint articles and reports that have appeared already in current periodicals. This custom seems to be spreading also to hospitals and laboratories, which reissue in the form of reports material previously printed. Surely there is a great deal of paper and printer's ink wasted to no particular good purpose in these days, acknowledge though we must that this productiveness betokens scientific activity and interest in medicine.

Some one has characterized America as the land that flows with ink and money, and the first ingredient is certainly liberally used by the medical profession here. The same is true of the medical profession abroad, possibly to a greater extent than here in some respects. In the interest of higher standards and greater concentration and accessibility of our medical literature an appeal must be made to the self-criticism of those who write. Let not your literary activity be measured by the number of papers and addresses printed each year, or by their length, but solely by the quality. And when publishers tempt you to cover again some well-trodden field, yield not!

AUTHORS AND MEDICAL SUBJECTS.

A novelist tells the story that in writing his latest work he called in his family physician to assist him in duly disposing of one of his characters and—here comes the special point of his tale—he received a bill for professional services for the same. While we did not learn the exact state of the author's mind when this occurred, it would appear from his reporting the event that he considered it somewhat extraordinary. Why this should be so is not self-evident unless it be that it seemed to him that doctors could deal only with actualities, and was not aware that medical opinion on fictitious cases has a legally recognized value and is constantly being called for in the courts. The service rendered in this case can hardly be questioned—certainly not when one recalls the too common medical mistakes of writers of fiction. The curious thing is, that the writer who had the sense to call for such aid should have not appreciated its money value.

BOVINE TUBERCULOSIS.

According to a printed interview, Dr. J. G. Adami, the distinguished pathologist of McGill University, while not endorsing Professor Koch's almost absolute denial of the communicability of bovine tuberculosis to man, yet thinks him nearer right than his critics. Among these he includes Lord Lister, Drs. McFadyean, Bang and Nocard. It is, in his opinion, just as extreme an assertion to say there is imminent danger of the transfer in all cases of the animal disease to our species as it is to unqualifiedly deny this, or to consider the peril an altogether negligible quantity as does Koch. For two years he says he has been working on this question in connection with Drs. C. F. Martin and C. Higgins, and apparently his opinions heretofore expressed as to the difficulty and infrequency of such transmission, and the weakness of the evidence of its occurrence have not been changed to any extent by these later researches. Adami's opinion as well as Koch's will carry weight, and together are alone enough to cast a cloud over the universal validity of the generally accepted medical dogma of the danger of bovine tuberculosis to man.

ST. LUKE'S HOSPITAL AGAIN.

A subscriber writes us regarding the notorious St. Luke's Hospital and enclose circular letters, facsimile of diploma, etc., received by him from that institution, and says: "This abominable fraud is being sent out to hundreds of practitioners. . . . On looking over the names and degrees of the 'staff' one would be led to believe that it is one of the most eminent in the whole country." The doctor goes on to state that he writes to urge us to expose it and that it is the duty of medical journals to warn their readers of the swindling concern, etc. We have called attention several times to this Niles (Michigan) scheme for "working" physicians, and we doubt if any regular readers of The Journal of the American Medical Association are possessors of their "beautiful diplomas." We can hardly believe that any intelligent physician who acted deliberately could now be duped by the "eminent" names, though their affixes are imposing enough at first sight. They certainly seem varied enough to satisfy the most liberal minded, including as they do representatives of all schools, with osteopathy thrown in. They only need a few Dowieites, "Christian Scientists," and other voodoos to make the assortment complete. Besides the great Granville, who heads the list, and presumably manages the concern, we see the name of the redoubtable Zwigtman Van Nopper of Independent Medical College fame, who, it is said, toured through India leaving a trail of Armstrong diplomas behind him. After all, the question is whether the doctor who buys one of these certificates and hangs it in his office for the purpose of impressing his patients with the idea that it means something of which he might be proud, is not practicing deceit just as much as the ones who sold him the parchment. While it hardly seems necessary to warn honest physicians against the concern, the attention of the Michigan authorities is again respectfully called to its existence.

THE PHILIPPINE INSULAR BOARD OF HEALTH.

The Philippine Commission has not neglected one of its chief duties, namely, attention to public health, a greater necessity in a tropical country even than in a temperate climate. Without positive knowledge as to the details of previous laws, it is yet safe to say that there has been much needing reform in this line, certainly this is so as regards the practical application of sanitary rules. Manila is already a very different place in this particular from what it was under former control, and the continuance of the good work is provided for, not only for the chief city but for the islands generally, by the enactment of a law constituting and providing for an Insular Board of Health, having full supervision of sanitary matters and vital statistics. The latter is also authorized as well to regulate and disseminate information on sanitary subjects among the people, to draft and recommend suitable laws, including those governing the admittance to the practice of medicine and has also authority to prosecute all violators of the sanitary regulations. The Board is composed of the commissioner of public health, who is chairman a sanitary engineer, a chief health inspector, the superintendent of the government laboratories, ex-officio, and a secretary; all, except the sanitary engineer and the superintendent of laboratories, are specified to be duly qualified physicians. The chief surgeons of the Army and Marine-Hospital Service, and the president and vice-president of the Association of Physicians and Pharmacists of the Philippine Islands are also honorary members, but without the right to vote. Another enactment provides for government biologic, chemical and vaccine and serum supplying laboratories to act as adjuncts to the health authorities as well as for such other purposes, agricultural, economic, etc., as may be required in the development and betterment of the country and its resources. It is evident that the present government of the Philippines is not one of mere politicians. It is to our interest as well as that of the Filipinos that scientific sanitation is carried out in the islands and there appears to be no danger at present of any serious failure in that respect.

Medical News.

CALIFORNIA.

Smallpox, *diagnosed as chicken-pox and Cuban itch,* and the patients not quarantined has resulted in at least forty cases of the disease in the Elsinore valley.

Sanitary Recommendations.—Health Officer O'Brien of San Francisco, in his annual report, urges the use of individual drinking cups in the public schools, and the proper fumigation of telephone transmitters, which he considers, "are admirably adapted for the harboring of bacilli."

Trolley Rides for Convalescents.—Dr. Matthew Gardner, chief surgeon of the Southern Pacific Railway Company, has arranged with the Market Street Railway Company, San Francisco, to provide a special car every Monday, in which the convalescent patients of the hospital are given a ride for three or four hours.

Personal.—Dr. F. P. Conac-Marquis was appointed chief surgeon of the French Hospital, San Francisco, August 25, vice Dr. F. Dudley Tait.——Dr. P. C. Remondino, San Diego, has filed a petition in bankruptcy.—Dr. W. J. Bauer has been appointed resident physician of the 26th Street Hospital, San Francisco, vice Dr. Victor E. Putnam, resigned.

CONNECTICUT.

Dr. John J. Wagner, Greenwich, was injured in a runaway accident August 25, breaking his leg.

Personal.—Dr. John H. Billings has resumed the practice of his profession in Middletown.——Dr. Charles W. Page has retired from the superintendency of the Connecticut Hospital for the Insane, Middletown, and will spend the winter in Hartford and go to Europe in the spring.

Examination of School Children.—Drs. Alfred G. Nadler, Percy D. Littlejohn, Jeremiah J. Cohane, Frank A. Kirby and Edwin P. Pitman have been appointed examining physicians for the public schools of New Haven. For the time being they receive no salary, but it is hoped that the value of the service rendered may impel the Board of Finance to make an appropriation that the work may go on.

ILLINOIS.

Smallpox.—Coal City has four cases of sickness which has been pronounced smallpox by the official of the State Board of Health sent to investigate the matter.

Dr. George A. Lierle, Payson, was injured by the overturning of his buggy, August 14, sustaining a fracture of the skull and severe contusions of the chest and back.

Gift to Bloomington Hospital.—Abram Brokaw and his wife have given $10,000 to the Deaconess Hospital, Bloomington, on the condition that the institution be thereafter known as the Brokaw Hospital. The trustees have accepted the conditions and the money.

Peace at Elgin.—Members of the Woman's club look on the action of the physicians with favor. They assert, that in organizing, the doctors simplify matters and make possible an adjustment. The general feeling now is that instead of a preparation for concerted action against the Woman's club the organization of the physicians may be interpreted as an extension of the hand of fellowship.

Personal.—Dr. Roy B. Roberts, Brooklyn, has located for practice in Augusta, succeeding Dr. Chalmer R. Hecox.——Dr. Robert L. Frisbie, Baileyville, has been appointed attending physician at the Home for the Feeble-Minded, Lincoln.——Dr. James W. Smith, Cutler, has moved to Baldwin.——Dr. John T. Lloyd, Pulaski, has moved to Baldwin.——Dr. John C. Kirby, Verona, has located in Morton.

Chicago.

An Examination for District Physicians was held by the County Merit Board, September 4.

Operation at County Jail.—What is said by the lay press to have been the first operation for appendicitis performed in a jail in the United States, was made on a prisoner charged with murder, August 27, by Dr. Francis W. McNamara.

A fire at the County Hospital, August 27, caused a little damage, threatened for a time to destroy the hospital and created a panic which was quieted only after great efforts by the attendants under the personal direction of Warden Healy.

War on Quacks.—The attorney for the State Board of Health announces that the Board is about to take active measures for the suppression of the quack doctors, dispensaries and medical institutes "whose advertisements enrich the daily papers and attract the ignorant masses. Several individuals have been summoned on the charge of practicing medicine without license and the first cases are set for September 9.

Smallpox in Chicago.—The August 31 issue of the Weekly Bulletin of the Health Department states that for the first time in more than thirty months the City Isolation Hospital was emptied of smallpox patients last week. Between March 9, 1899, the date of the first case of the series, and August 12, 1901, the date of the last admission, 342 cases of smallpox were discovered in the city, and removed to and treated in the Isolation Hospital. The last case was discharged, recovered, August 28, the resident physician relieved from duty, and the hospital closed. During the period a total of 960,588 persons were examined as to their vaccinal status by the medical inspectors of the Health Department and the public vaccinators, and 220,648 were vaccinated. The greatest number in any one month was 303,725 examined and 44,904 vaccinated in February, 1901, since which time the disease has steadily declined until the city is now free from the pest. This is a very gratifying contrast to the exhibit made by other large cities of the country.

New Rules for County Hospital Staff.—Warden Healy of the Cook County Hospital has issued the following rules as a guide for attending physicians and surgeons, internes and nurses: "Transfers must be reported immediately to warden by interne in charge of patient at time transfer is ordered by attending man. Notice of emergency service and transfer cases should be immediately telephoned to attending surgeon and the particulars of the case given to party answering telephone. Operation blanks must be filled out each day and filed in the warden's office before 9 o'clock the following morning. Duplicate operation blanks must be left with the warden every Saturday before 5 o'clock p. m., for the use of the attending surgeon. The junior surgeon must make the final preparation of patient before operation, both in and out of clinic. The senior surgeon should not be permitted to make such preparations, as it greatly endangers the aseptic result. Instruments, needles, sponges, etc., at operations should be handled entirely by the nurses. Senior internes are directed to comply with and enforce orders and instructions of attending surgeons and physicians as to prescribed treatment for patients assigned to their service, and report to the warden any neglect of patients by nurses or junior internes. They will pay strict attention to rule governing the discharge of patients before 12 o'clock m. each week day. Train cases will be taken to Dunning on Mondays, Wednesdays and Fridays. Ambulance cases Tuesdays and Saturdays. Dunning cases should be reported to the warden's office the night preceding their discharge.

INDIANA.

Dr. J. C. O'Day, Montpelier, has moved to Bradford, Pa.

Dr. Herbert O. Statler is about to move from Goshen to Kalamazoo, Mich.

Medical College of Indiana.—The new $20,000 addition to this institution is nearly completed. It is a three-story building, the lower floor of which is to be used in connection with the Bobbs Free Dispensary. The second floor will be arranged for society halls and the third will be utilized for laboratory and microscopical work.

Insanity Trust Report.—The State Board of Charities today filed a report with the Governor on the investigation of the insane hospitals to ascertain if any sane persons are deprived of freedom. The report says no such persons are confined, and have not been within the last sixteen months, unless in the case of one patient, who probably recovered after he was found insane and before he was received at the hospital, a period of fifty-three days. The report says: "It may be proper for us to suggest that the effort to connect the 'insanity trust' with the hospitals was unfair to the institutions."

KENTUCKY.

Dr. William H. Forgy, Fairview, has disposed of his practice and will move to Pembroke.

Dr. Archibald H. Barclay, Lexington, knocked out a footpad who attempted to rob him, August 25.

Shows and Circuses Quarantined.—The Bowling Green Board of Health met, August 29, and adopted a resolution, establishing a quarantine "against all traveling shows or circuses of any kind coming into and showing in the city of Bowling Green or within two miles of said city limits within thirty days from date.

Conclave Medical Committee.—Under the efficient generalship of Dr. T. Hunt Stucky and the intelligent co-operation of his special medical aids and medical corps numbering ninety-one, the medical arrangements of the Knights Templars' Conclave at Louisville were as nearly perfect as they could be made. Eighteen litter corps stations were established and six ambulances were on duty.

MARYLAND.

Personal.—Dr. William H. McCormick, of Cumberland, celebrated the fiftieth anniversary of his marriage, August 28.——Dr. William H. De Courcey, of Queen Anne's County, is at Bedford Springs, Pa.——Dr. E. Williams, of Anne Arundel County, has gone to Boston.

Smallpox Epidemic Predicted.—The health authorities think that the approaching winter promises a wider prevalence of smallpox in the United States than the country has experienced in thirty years. All signs, they say, point that way, and the local boards of health are urged to take due notice and guide themselves accordingly. The vaccine physicians are instructed to visit the schools on the opening day and vaccinate all who need it. School boards are advised that there is urgent need of rigid enforcement of the vaccination law. Two cases of smallpox have appeared at Cooksville, Howard County, both in negroes. A large number of negroes have come in contact with the cases, and considerable anxiety is felt. Prompt vaccination, isolation and disinfection have been instituted. It is said the State Board will bring action against those responsible for not reporting the cases promptly as required by law.

Baltimore.

Personal.—Dr. H. B. Eggers is at Bridgeton, Pa.——Dr. Alfred Whitehead has gone to the Exposition, and will also visit Canada and the Adirondack Mountains.——Dr. Arthur O. Brickman is at the Blue Mountain House.——Dr. J. D. Fiske is at Atlantic City.——Dr. H. J. Carrick has gone to the Buffalo Exposition.——Dr. F. R. Rich is at Cape May.——Drs. C. C. Peebles and L. Gibbons Smart are in Lancaster County, Pa.——Dr. Isham R. Page is at Cape May.——Dr. John N. Mackenzie is at Narragansett Pier.——Dr. George Reuling has returned from Narragansett Pier.——Dr. M. H. Carter has gone to the Exposition, Niagara and Canada.——Dr. Robert Hoffman has returned from Berlin.——Dr. J. C. Hemmeter is in Montreal.——Dr. T. Chew Worthington is at Atlantic City.—Dr. J. E. Heard is at Dinsmore Beach, Md.——Dr. W. Tunstall Taylor has gone to Boston.

MASSACHUSETTS.

Personal.—Dr. Warren K. French has opened an office in Worcester.——Dr. J. Oswald Vogel has located at Mount Bowdoin.

A hospital for crippled children is to be established on Bumkin's Island off Hough's Neck in Hingham Bay, through the munificence of Mr. A. C. Burrage, who has secured a long lease of the island from Harvard University.

In Memoriam.—The Eastern Hampden Medical Society, at its meeting in Springfield, August 22, passed resolutions in memory of two recently deceased members—Drs. Harry A. Merchant, Monson, and Joseph T. Pero, Indian Orchard.

Italians Spread Malaria.—In the annual report of the State Board of Health Secretary S. W. Abbott says that during the last ten years every case of malaria investigated in Massachusetts has been traced to the presence in the neighborhood of Italian laborers.

Lowell Demands Isolation Hospital.—Agent Knapp, in behalf of the Lowell Board of Health, sent a letter, August 10, to the State Board of Health, asking the latter to take measures to compel Lowell to build a contagious hospital as required by the statutes. The reason is the prevalence of diphtheria and the insufficiency of accommodation.

MICHIGAN.

Scarlet fever is reported to be epidemic in Delray, where from forty to fifty cases have been reported.

Dr. Arthur MacGugan, Kalamazoo, for the last six years on the staff of the State Hospital for the Insane, has resigned, and expects to take a course of special study in Heidelberg.

Embalmers Examined.—By an order of the State Board of Health embalmers in Michigan will be required to pass an examination and receive a license before they are permitted to practice their profession.

Personal.—Dr. George Dock, Ann Arbor, has returned from Europe.——Dr. Gustav Sweet, St. Joseph, will locate in Montana.——Dr. James A. Anderson, Big Beaver, has sold his practice to Dr. W. S. Gass, Rochester.

Dr. Henry D. Thomason, formerly of Albion, but now a major and surgeon U. S. V., on duty in the Philippines, has been made surgeon-in-chief of the Department of Southern Camerines with about 40 posts under his care.

MISSOURI.

Smallpox in malignant form has appeared near Fredericksburg and one patient has died.

Baby Farm Licenses Refused.—The applications for license for five "maternity hospitals," so-called, were refused by the Kansas City Board of Health, August 24.

Dr. Adams' Estate Sued.—University Medical College, Kansas City, has sued the estate of its late dean, Dr. Charles W. Adams, for $36,536.90 fees from students alleged to have been received by him and not turned over to the treasurer.

OHIO.

Removals.—Dr. Oliver T. Sproull, from Bentonville to West Union.——Dr. Melvin M. Acker, from Bryan to Butler, Ind.

Chief Surgeon Louis L. Syman of the Detroit Southern Railway has appointed a full staff of assistants and alternates in his territory.

Dr. Harry P. Findley, for several years assistant at the Massillon State Hospital, has resigned, and Dr. Edward L. Emrich, Wooster, has been appointed his successor.

Madame "Dr." Kelch, Cincinnati, has been arrested, charged with unlawful practice of medicine in Blanchester. She waived examination and was held over to the Court of Common Pleas.

NEW YORK.

Major William P. Kendall, surgeon, U. S. A., is now stationed at Fort Porter, N. Y.

Dr. Alton L. Smiley, Buffalo, has been appointed junior physician at the Manhattan State Hospital at a salary of $900

Board of Health Conference.—A conference of state and provincial boards of health of North America will meet at the Cataract House, Niagara Falls, N. Y., September 13 and 14.

Typhoid fever is more prevalent in Buffalo this year than it was last year, for the same period. From August 1 to 24, 82 cases were reported to the Health Department. Last year for the entire month of August there were 77 reported. The number of deaths reported is but 7 this year, as compared with 13 last August.

Visiting Physicians.—The following physicians have been visiting Buffalo and the Exposition: Dr. Eugene Smith, Detroit; Dr. Lewis S. McMurtry, Louisville; Dr. Charles A. L. Reed, Cincinnati; Dr. N. R. Coleman, Columbus; Dr. George Henry Fox, New York; Dr. Gebhard Ullman, Albany, and Mr. William Whitford, medical stenographer, Chicago.

Buffalo Academy of Medicine.—Regular sessions of the academy for 1901-1902 commenced at the academy rooms, Tuesday, September 3. The medical section, Dr. Julius Ullman presiding, entertained. Dr. John C. Hemmeter, Baltimore, delivered an address on "Intestinal Dystrypsia," and Dr. De Lancey Rochester read a paper on the "Treatment of Pneumonia."

PENNSYLVANIA.

Personal.—Dr. W. W. Dill has decided to locate in Pottstown.——Dr. Ruth Tustin has moved to Bloomsburg from New York City.——Dr. Walter S. Wilson, Lewisburg, has moved to West Chester.——Dr. Arthur C. Wheeler, Erie, has opened an office in Reynoldsville.

Uniontown Hospital.—A permanent organization of the Uniontown Hospital Association was made, August 20. Dr. Thomas N. Eastman was elected vice-president and Dr. Jacob S. Hackney, secretary of the association. The building fund already amounts to $5000.

TEXAS.

Dr. Ramsey D. Potts, Bonham, will locate in Helena, Montana.

State License and Name.—A well-connected criminal bearing the suggestive name of Killum, was arrested for malpractice a short time ago. It developed that he had stolen the license of Dr. Joel A. Blackwell, an esteemed practitioner of Cooper, and had also assumed his name and boldly started out to practice, his sole capital consisting of the license and experience gained while traveling with a horse-doctor.

The following are the resolutions regarding smallpox, adopted at the meeting of the County Judges and Commissioners' Association, held at Dallas, August 8 and 9: "Whereas, smallpox is now and has been widely prevalent over the State during a period of more than three years, thus demonstrating the total insufficiency of our present health laws to furnish the people with the protection against imported pestilential diseases, to which they are justly entitled; therefore be it resolved, that we appeal to His Excellency, the Governor, to recommend to the present session of the Twenty-seventh Legislature to pass an act creating a State Board of Health, with provision for the collection and preservation of the vital statistics of the State; and an equitable distribution of the expense incident to the administration of sanitary measures between the State, the counties and the municipalities thereof, in accordance with the provisions of the Constitution and the recommendation of the late Democratic State Convention in its session at Waco. And be it further resolved, that the secretary of this association be instructed to furnish the Governor with a copy of this resolution as soon as practicable."

GENERAL.

Prof. Paul C. Freer, of the University of Michigan, has been granted leave of absence for one year, with the privilege of more, from the regents. He has been appointed to take charge of one of the Government laboratories in the Philippines.

Tuberculosis in Hawaii.—The records of the Board of Health show an ever-increasing percentage of deaths due to pulmonary tuberculosis. The greatest spread of the disease is among the natives who move from the open air of the country into the closed houses of the towns; they are also lax in their general habits and expectoration.

The Territorial Medical Society of Hawaii met recently and the following resolution was passed: "That the recent attacks made upon Dr. L. E. Cofer, of the U. S. Marine-Hospital Service, for alleged impropriety and discrimination in examining passengers on the *America Maru,* were unfair, uncalled for and not justified by the facts."

Chiropodists Not Required in Army.—The Surgeon-General of the U. S. Army denies the necessity of pedal surgeons in that service, as recently recommended by Col. Philip Reade. The men selected for military service are not of the lame and decrepit variety, and if anything happens to their feet it is more likely to be sufficiently serious to require the attention of the regular surgeon.

Canadian Medical Association.—The most successful meeting of this Association ever held was that in Winnipeg, Manitoba, on August 28 to 31. Much progress was made in the question of Dominion registration, and a Medical Protective Association formed. The next meeting of the Association will take place in Montreal. [illegible] s were electe President, Dr. Francis J. [illegible], general secretary, Dr. George Elliott, Toronto; treasurer, Dr. Henry B. Small, Ottawa.

Scarcity of Physicians in Labrador.—Dr. Grenfell, superintendent of the mission to deep-sea fishermen, now operating in Labrador, publishes an article exposing the medical deficiencies of Labrador. He found people dying of cancer, dropsy, and scurvy, who had never seen a physician. He found no hospital near, no regular steam service to Gaspé or Quebec, and no means by which the people could procure medical or surgical treatment. He urges the Dominion government to take prompt steps to remedy these conditions.

Inefficiency of the Caldas Serum.—Dr. Caldas is returning to Brazil, since his experiments with the alleged yellow fever remedy have resulted in failure. He and Dr. Bellinzaghi came to this country some weeks ago and endeavored to enlist the co-operation of the Medical Department at Washington, but without success. They then went to Havana and Governor-General Wood was induced to appoint a commission to investigate the claims of the Brazilians. This board consisted of Drs. Gorgas, Finlay, Guiteras and Agramonte. It has finally decided that under no condition should further experiments of the kind be made. A full report will soon be made and filed with the Governor-General.

FOREIGN.

Prize for Van Gehuchten.—The Belgian quinquennial prize for medical research, amounting to $1000, has been awarded to Professor Van Gehuchten for his studies on the brain and spinal cord.

Heidelberg's New Restrictions on Foreign Medical Students.—The lay press announces that the authorities at Heidelberg have decreed that hereafter no foreign students shall be admitted to the medical course who have not passed an examination fully equivalent to the "Abiturienten examination" exacted in Germany.

English Commission on Tuberculosis.—King Edward has appointed the commission to investigate the transmissibility of animal and human tuberculosis. It is to consist of Sir Michael Foster, secretary of the Royal Society; Dr. Germain Sims Woodhead, the pathologist; Prof. J. McFadyean; Prof. W. Boyce, and Dr. Harris Cox Martin.

The French Degree of Colonial Medicine.—The French universities at Bordeaux and Marseilles are instituting a course of colonial medicine, entitling the graduates to the degree of Doctor of Colonial Medicine. The hospitals of Marseilles afford unusual opportunities for studying the diseases prevalent in the French colonies, mostly in the tropics.

Deaths Abroad.—Dr. Holland, gynecologist at Berlin, in his thirty-sixth year. His death was determined by sepsis from a professional injury. Other deaths reported are those of Dr. Fontorbe, professor of surgery at Rochefort; Dr. Salitschew, professor of surgery at Tomsk; Le Roy de Méricourt, of Paris, born 1825, founder and editor of the *Archives de la Méd. Navale.*

Success of the Danyz Bacillus for Exterminating Rats.—The *Deu. Med. Woch.* for August 22 contains a communication from Moscow describing the complete success of the experiments with the Danyz bacillus. It proved very pathogenic for rats, and by mixing the cultures with a concentrated alkaline solution, the acidity of the gastric juice was neutralized, and the virulence of the bacilli maintained unimpaired by passage through the animals.

Alwin Von Coler, Surgeon-General of the German Army, whose death was noted in the last issue of The Journal, was born March 15, 1831, at Gröningen, of an old patrician family of Hartz origin. After four years (1852-56) in the Military Academy of Berlin, he entered the Dragoon-Guards regiment as acting assistant surgeon, becoming assistant surgeon in 1857 and surgeon in 1863. Owing to his efficiency in the campaign of 1864-66 he was in 1867 promoted to the Medical Staff of the Prussian army, and, in 1868, on the establishment of the Medical Department in the war office was appointed decernent therein. Excepting 1870-71 during which years he was Division Surgeon of the First Active Division, his service in the war department has been continuous. In 1874 he became surgeon-general, in 1885 chief of the Medical Department, and in 1889, surgeon general of the army, chief of the sanitary corps and of the Medical Department of the war office and director of the Kaiser Wilhelm Academy for Military Medical Science. In 1889 he was appointed chief privy medical counsellor, in 1891 lieutenant-general, and in 1892 honorary professor in the University of Berlin. Under Von Coler's administration the organization of the Medical Department of the army for war or peace was placed on a new foundation and the sanitary corps was raised to a high grade of efficiency. It was also Von Coler's constant aim to establish close union of the military with the civil medical profession.

Miscellany.

Vaccine.—Not alone in Cleveland but all over the country are heard more or less positively expressed suspicions of the purity of much of the vaccine virus at present on the market. It is probable, we fear, that there is some fire beneath all this smoke, and yet certain makers of vaccine are now ideally careful and clean in the preparation of the virus. As matters stand, however, the innocent are likely to suffer with the guilty, unless there is designed some effective method of guaranteeing the purity of the virus. If it were possible, it would appear that the manufacture of vaccine should be placed under Federal inspection. The Department of Agriculture, by adding slightly to its very capable scientific staff, could very readily and authoritatively assume this work. Perhaps this reform, which should be demanded by the honest manufacturers for their own protection as well as by the medical profession, could best be compassed by placing a very small revenue tax on vaccine, just sufficient to raise money for the expense of the inspection, and by providing minimum standards of chemic and bacteriologic purity. This is a very important matter which should be dealt with thoroughly by the effectively reorganized American Medical Association. The matter should not be permitted to rest, but should be persistently agitated. No doubt some better method can be devised, and the only point on which the Journal insists is that a means must be found to ensure the purity of vaccine.—*Cleveland Journal of Medicine,* August.

General Hospital in Samara, Russia.—The General Hospital at Samara is located in a handsome park near the western limits of the city, and consists of a number of wooden buildings, in barrack style. Each building does service for seventeen years, when it is removed and replaced by a new one. At present the hospital contains 400 patients. These patients are admitted from all parts of the Samara province and pay 20 kopeks a day. If the applicant is destitute, as is often the case, the district from which he comes pays this small charge for him. We spent half a day in the surgical section, in charge of Dr. Johannes Dsirne, a surgeon of more than a local reputation. We had the pleasure of witnessing two operations for stone in the bladder. Stone in the bladder is quite common in this section of the country, as this surgeon performs annually on an average 100 operations. Although the operating-room lacks many of the modern conveniences, the results obtained would compare well with those in our best equipped institutions, something we must attribute to the pedantic cleanliness of the operator and his assistants. The anesthetic, chloroform, was administered by a female feldscheer or barber surgeon, and two other women of the same grade of medical education rendered assistance. The chief assistant was a recent graduate in medicine. These barber surgeons, male and female, are expected to assist licensed physicians, but are not permitted to operate or prescribe except in cases in which the services of a regular graduate in medicine can not be secured. These barber surgeons must study their profession for four years, and the women are required to take an additional course in gynecology and obstetrics. Both patients were puny boys from the steppes of western Russia. In one case the high operation was performed; in the other the stone was removed by median perineal section after crushing. It is a fact worthy of note that according to the experience of Dr. Dsirne the peasants are almost immune against shock, he in his large experience having only observed one case. Dr. Dsirne invariably sutures the vesical wound in performing the high operation, using two rows of fine silk sutures, excluding carefully the mucous membrane. In most cases uncomplicated by cystitis he has seen the wound heal by primary intention. If cystitis is present he drains. Dr. Dsirne is a careful, conscientious, and dexterous operator. I am glad to know that he will visit the medical institutions of Chicago some time next summer.—Dr. N. Senn, in *Chicago Tribune,* Sept. 1.

Reorganization of the American Medical Profession.—The plan of the Committee for the federation and interdependence of the National, State and County societies is an excellent one. Membership in the county society becomes a prerequisite to membership in the other organizations. The county organization thus becomes an unit of the state association, and the state of the National body. Each is thereby strengthened and made more powerful, each becomes more cohesive and each develops into an effective, offensive or defensive organization which will command respect and consideration because it represents an organized power which is able to reward or punish, both its friends and its enemies. The medical profession in America is large in numbers, but it lacks stability and cohesiveness when called upon to protect its interests against agencies that are detrimental to its welfare. In this it, in no small manner, is similar to that Asiatic nation, the so-called celestial kingdom, which is great in numbers but whose slight stability and cohesive power renders it an easy victim to its enemies. Reorganization of the medical profession in America is a necessity. This must begin in the county society which is to form the basic part upon which the entire fabric of an organized profession must rest. Upon these is to be built the state organization, and from the State societies must come the chosen few who are to wear the senatorial togas in the parliamentary body of the American Medical Association, the body that is to formulate the policy of the profession on matters of vital interests, the body that is to aid destiny to shape our ends to a satisfactory conclusion, rough hewn though they be, the recommended House of Delegates of the American Medical Association. As recommended by the Committee, regional, tri-state and district societies, save in a few instances, should be abolished. These, as at present constituted, serve but a slight purpose for good, while on the other hand they weaken and detract from the county and state societies that as federated units are essential to the integrity of the National Association. They are parasitic growths on the medical body politic which sap the life strength of the National organization, and as such should be lopped off and allowed to perish. Let their friends and promoters devote their energies to the upbuilding of their respective state and county societies where their efforts will add to the strength of the profession as a body, and where they will hasten and not hinder the consummation of professional unity. In the trinity of National, state and county organizations, a federated union, in which each is developed to its greatest possibilities, will the profession find a power, that, like faith, can move mountains.—*Courier of Medicine*, July.

Book Notices.

THE PRESENT POSITION OF THE TREATMENT OF SIMPLE FRACTURES OF THE LIMBS. An Address Delivered in Opening a Discussion at the Meeting of the British Medical Association held at Ipswich, August, 1900. By William H. Bennett, F.R.C.S., Senior Surgeon to St. George's Hospital. To which is Appended a Summary of the Opinions and Practice of about 300 Surgeons. Reprinted, after revision, from the British Medical Journal, Oct. 7, 1900. Cloth. Pp. 41. Price, $0.80. New York and Bombay: Longmans, Green & Co. 1900.

This little volume is an address delivered before the British Medical Association in August, 1900, and reprinted from the *British Medical Journal* of Oct. 7, 1900.

In it the author briefly states the general plan of treating the ordinary fractures as employed by himself, and particularly emphasizes the advantages of early movement in the treatment of fractures and the employment of splints which can be readily taken off, so that the limb and fracture may easily be rendered accessible.

In an appendix are the answers from about three hundred surgeons in England to certain questions concerning the treatment of fractures, which were submitted to them by the author. As was to be expected, a larger percentage of those surgeons living in London and in large centers adopt the more advanced methods, such as the use of massage, passive movements and operative procedures, than of those living in the provinces. The general status of the treatment of fractures by English surgeons is well illustrated in the little volume.

ON THE USE OF MASSAGE AND EARLY PASSIVE MOVEMENTS IN RECENT FRACTURES and other Common Surgical Injuries and the Treatment of Internal Derangement of the Knee-Joint. Three Clinical Lectures Delivered at St. George's Hospital. By William H. Bennett, F.R.C.S., Senior Surgeon to the St. George's Hospital. Reprinted, after revision, from The Lancet. With 12 Illustrations. Cloth. Pp. 97. Price, $1.40. New York and Bombay: Longmans, Green & Co. 1900.

The author, in his note, explains that these three lectures have been already published in *The Lancet*, the only difference being "a few verbal alterations," and the addition of three illustrations. The author's strong plea for the use of massage and early passive movements in the treatment of recent fractures is very convincing, and the explanations very rational. One criticism, however, might be offered with regard to fractures of the neck of the femur. He does not insist, as some modern surgeons do, that union is nearly always possible, but dismisses the subject by simply advising the use of massage and passive movement without any attempt at fixation. In all other fractures he is very careful to maintain fixation at the region of fracture with the hand while making use of passive motion, or as he terms it, internal massage. His advocacy of the use of the above procedures in the treatment of dislocations, sprains, etc., leaves nothing to be desired. The chapter on internal derangements of the knee-joint deals with the subject in a very clear and concise manner.

A TEXT-BOOK OF OPHTHALMOLOGY. By John W. Wright, A.M., M.D., Professor of Ophthalmology and Clinical Ophthalmology in the Ohio Medical University. Second Edition, Thoroughly Revised. With 117 Illustrations. Cloth. Pp. 378. Price, $3.00. Philadelphia: P. Blakiston's Son & Co. 1900.

In this work the student and practicing physician learn the why and wherefore of anomalies and methods of treatment and procedure. It contains, among others, chapters on retinoscopy, ophthalmoscopy, injuries, color-blindness, elementary optics, and refraction. The different operations for extraction of cataract are carefully considered, but we miss the orthoptic exercises for muscular insufficiency. An important feature of the treatise is an ophthalmologic glossary; this is not only a convenient but also a necessary adjunct, as is evident from the inaccurate pronunciation of many of our oculists, for instance of the word "chalazion," and even "pterygium."

TRANSACTIONS OF THE INDIANA STATE MEDICAL SOCIETY, Fifty-Second Annual Session held in South Bend, May, 1901. Logansport, Ind.; Wilson, Humphrey & Co. 1901.

The present volume, according to the preface, is the largest every published by the Society. It is certainly a large volume, but the Society is to be congratulated especially that the quality of its contents is so excellent. There are 41 original papers and 2 symposiums, besides several scientific reports; all of these are up to, and many above, the average. The paid membership is 1624, which is but little more than a third of the regular physicians of the state, not a good showing when it is remembered that membership in county societies carries with it membership in the state society. "Efforts to form new societies," says the secretary in his report, "have not been successful during the past year." It would be interesting to know what these efforts were and how they could be made more effective. Two-thirds of the members of the regular profession in a state who do not belong to any society is not a very satisfactory condition. And yet how many states are doing better?

ORTHOPEDIC SURGERY. A HANDBOOK. By Charles Bell Keetley, F.R.C.S., Surgeon to the West London Hospital. Cloth. Pp. 539. Price, $5.50 net. London: Smith, Elder & Co. 1900.

The author says he planned this work nearly twenty years ago, and that it is the result of twenty-two years devoted to thought and labor in the study of deformities and in practicing their treatment. He also says he has "felt a desire to remove some of the dust in which mistaken ideas of what constituted proof had gradually been hiding simple facts about the pathology and treatment of deformities."

He does this by attributing nearly all deformities involving the bones to rickets, and speaks of syphilitic rickets, scurvy rickets, common rickets, rickets of adolescence, etc., practically disregarding other factors, except infantile paralysis. This view is too extreme. There is also a tendency to dodge important points by asking questions, the answers to which are often not forthcoming. For instance, he denies the influence of muscular action in forming the arch of the foot by asking the question: "What muscles arch the Roman nose?" In the etiology of flat foot no mention is made of the effect of trauma in breaking down the arch.

On one page he says that after tenotomy the foot should be immediately placed in the best attainable position, and on the next that "complete correction should only be aimed at by gradual extension, commencing a fortnight after the tenotomy and prolonged over several weeks."

The fact that the muscle sheath, fasciæ of the neck and other tissues besides the sterno-cleido-mastoid muscle are involved in wry-neck is not sufficiently recognized, neither under the pathology nor when considering the treatment. The chapter on scoliosis is very good; in fact the spinal troubles are better handled than are those of the extremities. While one may be disappointed with the pathology as laid down in the work, there are many valuable points to be learned under Treatment, and it is here especially that the author shows his great practical knowledge and ability.

Married.

Stafford P. Jones, M.D., to Miss Mary Wilmarth, both of Marinette, Wis., August 22.

M. R. Beaudoin-Bennett, M.D., Jackson, Mich., to Miss Jean Martin at Trinity Church, Hewletts, L. I., August 21.

Herbert Emmons Stockwell, M.D., Stockbridge, Mass., to Miss Blanche Newton Cook, Brookline, Mass., September 4.

Charles Harrison Frazier, M.D., Philadelphia, to Miss Mary Spring Gardner at the chapel of St. Marys-by-the-Sea, North East Harbor, Maine, August 24.

Deaths and Obituaries.

Thomas Masters Markoe, M.D., College of Physicians and Surgeons, New York City, 1841, died, August 28, at his summer home at Easthampton, L. I. Dr. Markoe was a native of Philadelphia and graduated from Princeton in 1836. After obtaining his medical degree he was made professor of anatomy in Castleton Medical College, Castleton, Vt., and from 1852 to 1854 filled the chair of pathological anatomy in New York University. From 1860 to 1870 he was adjunct professor of surgery in the New York University, and from 1870 to 1879 he filled the chair of surgery in the same institution. In 1879 he accepted the chair of principles of surgery in the College of Physicians and Surgeons, and this position he held until his retirement when he was made professor emeritus. He was consulting surgeon to the New York, Roosevelt, Mt. Sinai, Woman's and St. Mary's hospitals; consulting physician to the Nursery and Children's Hospital, and a member of the New York Academy of Medicine, New York County Medical Society, New York Pathological Society, New York Medical and Surgical Society and the Society for the Relief of Widows and Orphans of Medical Men. He was a frequent contributor to surgical and orthopedic literature.

Alfred Sanford Dana, M.D., College of Physicians and Surgeons, New York City, 1874, a prominent physician of Westchester county, residing at Yonkers, N. Y., was killed by an express train on the Harlem branch of the New York Central railroad at the Bronxville crossing, August 22, aged 50. He was driving across the tracks when an express train rounded the curve and the coachman was unable to get the team over in time.

Homer C. Markham, M.D., New York University, 1859, one of the pioneer settlers and practitioners of Kilbourn, Wis., who served throughout the Civil war as surgeon of the 19th Wisconsin, and then moved to Buchanan County, Iowa, died suddenly at his home in Independence, from Bright's disease, August 18, aged 63.

James B. Massie, M.D., St. Joseph Hospital Medical College, St. Joseph, Mo., 1887, health officer of Houston, Texas, a member of the State Board of Medical Examiners and a successful physician of Houston, died at Fayetteville, Ark., from Bright's disease, after a prolonged illness, August 24, aged 45.

William W. S. Butler, M.D., University of Virginia, Richmond, 1852, died at Harrisonburg, Va., August 18, at an advanced age. He was formerly connected with the U. S. Internal Revenue Service. For several years he resided in Roanoke, Va.

H. P. Mathewson, M.D., formerly a well-known physician of Omaha, Neb., and from 1874 to 1879 superintendent of the State Hospital for the Insane at Lincoln, died suddenly at the residence of his son, in Los Angeles, Cal., August 19, aged 70.

Columbus P. Brent, M.D., Miami Medical College, Cincinnati, 1854, who has practiced medicine in Cincinnati for more than thirty years, died at his home in that city, August 21. He was a member of the American Medical Association.

Joseph Moffat, M.D., University of Michigan, Ann Arbor, 1862, of Washingtonville, N. Y., a member of the Orange County Medical Society and the New York State Medical Society, died at his home, August 16, aged 68.

Abram R. Van Dusen, M.D., Albany Medical College, 1841, one of the oldest and most successful physicians of Columbia County, N. Y., died suddenly at his home in Humphreyville, August 21, aged 81.

James M. Howard, Jr., M.D., Jefferson Medical College, Philadelphia, was dragged to death in a runaway accident at Fairmont, W. Va., August 19. He was a resident of Masontown, Pa.

Robert M. Murphy, M.D., Bellevue Hospital Medical College, New York, 1880, died at his home in Kingston, N. Y., August 22, from apoplexy, aged 52.

Frank B. Smith, M.D., Rush Medical College, Chicago, 1880, died at his home in Springfield, Ill., after a prolonged illness, aged 42.

Russell C. Wyman, M.D., College of Physicians and Surgeons, Keokuk, Iowa, 1878, died at his home in Maitland, Mo., August 14.

Societies.

COMING MEETINGS.

American Academy of Railway Surgeons, Chicago, Sept. 12-13, 1901.

Mississippi Valley Medical Association, Put-in-Bay, Sept. 12-14, 1901.

Conference of State and Provincial Boards of Health of North America, Niagara Falls, Sept. 13-14, 1901.

American Public Health Association, Buffalo, Sept. 16-20, 1901.

American Association of Obstetricians and Gynecologists, Cleveland, Ohio, Sept. 17-19, 1901.

Medical Society of the Missouri Valley, St. Joseph, Mo., Sept. 19, 1901.

Nevada State Medical Society, Reno, Sept. 21, 1901.

Medical Society of the State of Pennsylvania, Philadelphia, Sept. 24-26, 1901.

American Electro-Therapeutic Association, Buffalo, Sept. 24-26, 1901.

Oregon State Medical Society, Portland, Sept. 25-27, 1901.

Utah State Medical Society, Provo City, Oct. 1-2, 1901.

Idaho State Medical Society, Pocatello, Oct. 3-4, 1901.

Tri-State Medical Society of Alabama, Georgia and Tennessee, Nashville, Tenn., Oct. 8-10, 1901.

Wyoming State Medical Society, Evanston, Oct. 8-9, 1901.

Vermont State Medical Society, Montpelier, Oct. 10-11, 1901.

New York State Medical Association, New York City, Oct. 21-24, 1901.

Tri-State Medical Society of Alabama, Georgia and Tennessee.—The thirteenth annual meeting of this Society will be held at Nashville, October 8, 9 and 10. The secretary is Dr. Frank Trester Smith, Chattanooga, Tenn.

Piscataquis County (Maine) Medical Association.—The annual meeting of this Society was held in Dover, August 15. The following officers were elected: Dr. Ralph H. Marsh, Guilford, president; Dr. William Buck, Foxcroft, vice-president; Dr. Charles W. Ray, Sangerville, secretary, and Dr. Alvin H. Stanhope, Dover, treasurer.

Trenton (N. J.) Medical Library Association.—At a meeting of physicians held in Trenton, August 22, it was decided to form a permanent organization for the purpose of establishing a medical library in connection with the Free Public Library, and Dr. Horace G. Norton was made president; Dr. F. V. Cantwell, vice-president, and Dr. George N. J. Sommer, secretary and treasurer.

Franklin District (Mass.) Medical Society.—This old Society, now in its 51st year, has just issued a booklet giving the names of the officers and members, and the programs of the meetings of the past year. There are 32 members, the oldest of whom is Dr. E. A. Deane, of Montague, who became a member in 1862, and is called the "dean" of the Society. The first officers of this society were Stephen West Williams, Deerfield, president; the first secretary and treasurer was James Deane, of Greenfield. The first members to be admitted were Stephen J. W. Talbot of Shelburne Falls and Charles L. Knowlton of Ashfield on June 3, 1850.

ELEVENTH FRENCH CONGRESS OF ALIENISTS AND NEUROLOGISTS.

Held at Limoges, August 1.

President's Address.

In his presidential address Gilbert-Ballet remarked that it is dangerous and presumptuous to fasten a stigma on the offspring in case of certain accidental affections of the nervous system, such as ataxia, general paralysis or hemiplegia from a circumscribed lesion. He concluded by emphasizing the tendency of the new century to regard the pathology of the nervous system, and especially mental pathology, from the standpoint of society at large. The study of the psychology of a crowd will lead to a knowledge of its pathology. The crowd has its own individuality, its special emotions, reactions, obsessions and morbid impulses, the same as the individual.

Joffroy reported two cases of general paralysis in which the temperature suddenly began to fall and the patients died in three to five days with a temperature of 25 and 27 C. (77 and 81 F.). One patient was in coma at the time, but the other had no symptoms of coma, convulsions nor diarrhea.

INHERITED DEGENERACY.

Bourneville announced that hereditary syphilis has been noted in only 1 per cent. of the idiot, imbecile or epileptic children in his service, but alcoholism was evident in the antecedents of more than 40 per cent. He stated that in 87 families in which one or both parents were engaged in handling white lead, mercury, phosphorus, copper, etc., 52 per cent. of the children died, and 21 per cent. of the surviving 200 children were idiots or epileptics. This shows that about 73 per cent. of the children of parents following an unhealthy trade are seriously or fatally affected. He also mentioned several instances of transient purpura occurring after epileptic seizures.

Practical Application of Mirror-Writing.

In a communication on this subject Meige called attention to the fact that mirror-writing is the spontaneous effort of the left hand to write, in persons writing normally and fluently with the right hand. A similar phenomenon is observed with other movements which the right hand has learned to perform. The left hand spontaneously reflects, in reversed order, the movement or action of the right hand. What the cortical center for the right hand has learned, is reflected on the center for the left hand, which is thus unconsciously educated to a certain extent. When a center presides over a movement, the symmetrical center has a tendency to command the same movement, but in reversed order. Consequently in re-educating a member, the task will be much facilitated by having the symmetrical member execute and repeat the same movement.

Juvenile General Paralysis.

Régis observed that a hundred cases of general paralysis under 20 could be collected in literature. Usually hereditary syphilis can be incriminated, but Westphal has reported a case of general paralysis in a girl of 17, traceable to syphilis acquired at 7. Ballet has observed several instances in which the paralysis appeared three to five years after the syphilitic infection.

Evolution of Syphilis.

Brissaud remarked that his experience is confirming Fournier's assertion, that syphilis is undergoing a process of evolution in our day, in virtue of which the manifestations during the secondary period are becoming milder and milder, while those of the tertiary period are becoming more numerous and more formidable. Régis proclaimed his conviction that tuberculosis or any other infection may be the etiologic factor in general paralysis—and not necessarily always syphilis. The first address was on

Acute Delirium.

Carrier's statements were generally approved that acute delirium is a syndrome of a toxi-infectious nature, depending on various infections and intoxications, and is not a morbid entity. The nervous elements are altered by the pathogenic agent and hence allow the development of secondary autointoxications, which are the cause of its gravity. Crocq, of Brussels, aroused much discussion by his address on the

Physiology and Pathology of the Muscle Tonus, Reflexes and Contractures.

The routes of muscle tonus in the lower vertebrates, he said, are the shortest possible. The higher in the animal scale, the more the longer routes take the place of the shorter, until in man, the long routes for the tonus of the voluntary muscles are the normal and the only ones. The sphincters still retain the short routes. Excitation of a voluntary muscle inhibits the tonus of its antagonist, and the reverse is also true, i. e., that with diminished tonus in one muscle the tonicity of its antagonist is increased. Crocq adds three new laws to these: 1. Complete destruction of the central or peripheral motor neurons or of their cylinder-axis prolongations entails the atony of the corresponding muscles with complete and definite laxness. 2. Their partial destruction entails diminished tonicity; and 3, lesions of the tissues surrounding the nerve cells or their prolongations may hamper the nerve in its functional activity by mechanical compression from the injured tissues, and induce a functional erethism manifested in an exaggeration of the muscle tonus. The reflexes were formerly all attributed to the spinal cord, but we know now that the reflex movements are moderated by still higher centers in man at least. The long routes are indispensable to the production of the reflexes in man as is shown by their complete disappearance after section of the cervico-dorsal cord. On the other hand, destructive processes in the brain abolish or attenuate the cutaneous while they exaggerate the tendon reflexes. Destruction of the motor cortex induces exaggeration of the tendon reflexes in all animals and this is also induced in man and higher animals by a destructive process in the cerebellum. Consequently, it seems evident that in the human adult the cutaneous reflexes have their centers in the cerebral cortex and the tendon reflexes in the mesocephalon. The short routes become atrophied as the child grows to maturity, but they always suffice for very rapid defensive actions induced by a violent stimulus. Weaker impressions (cutaneous reflexes) traverse by preference the long routes. The tendon reflexes are exaggerated when the cerebral or cerebellar inhibiting action is weakened or abolished, either from irritation of the pyramidal tract or the basilar cells, as in organic hemiplegia and pareto-spasmodic conditions, or from irritation of the peripheral neuron as in case of sclerosis or compression of the spinal cord. Exaggeration of the cutaneous reflexes is due to individual peculiarities and various intoxications, and not to organic lesions of the nerve routes. Diminution or abolition of both the tendon and cutaneous reflexes follows the alteration or functional disturbance of the cells or fibers engaged in their production. The relations between the condition of the sensibility and that of the cutaneous reflexes are very close. The parallelism is constant in organic affections. The antagonism between the tendon and cutaneous reflexes frequently noted in organic affections and even in supposed health, is another argument in favor of their different localization. The toe reflex should not be considered a true cutaneous reflex, as it may persist after the cord has been severed. In lesions of the tissues surrounding the cylinder-axes of the pyramidal tracts, the irritation of the fibers induces erethism of the basilar neurons presiding over the tendon reflexes, and exhaustion of the cortical neurons involved in the production of the cutaneous reflexes. Hence exaggeration of the former and diminution of the latter. This also occurs after repeated stimulation of the reflexes; the cutaneous reflexes become weaker and weaker while the tendon reflexes become more and more exaggerated. Contracture is an exaggeration of the muscle tonus and may be due to inhibition of the antagonist muscle, or to a lesion of the tissues surrounding the central or peripheral motor neurons. There is no essential difference between the contracture in convulsions and that of hemiplegia, but in the pseudo-contracture of hemiplegia, with retraction of the tendons, there is evidently some alteration of the peripheral motor neuron with interference with its trophic function. Muscular hypertonicity does not necessarily coincide with exaggerated tendon reflexes—another argument in favor of their anatomic independence. The amount of contracture is usually proportional to the vigor of the muscle. Although some disturbance in the central or peripheral motor neurons is the principal, if not the only cause of contracture, yet there is considerable difference between the contracture due to each.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

Removal of Lanugo and Hairs.

A subscriber asks for a safe method (not electrolysis) of permanently removing superfluous hair, especially lanugo of the upper lip of girls.

There is no method of permanently removing hairs other than by electrolysis. This should not be attempted in such cases as mentioned above. A growth of coarse hair will recur even after electrolysis.

Treatment of Pertussis.

Just at this time of year pertussis seems to be very prevalent in some localities. This time in the year is certainly favorable to the prognosis of the disease. The little patients can be kept in the open air, and not housed in close rooms, which lessens the number of paroxysmal attacks of coughing as well as the severity of the attacks. The medicinal treatment is divided into the antiseptic, the anti-catarrhal and the sedative treatment.

Yeo is convinced that carbolic acid inhalations is of great value in the antiseptic treatment of this disease. He places the child in a small room containing an open fire-place; a large iron spoon should be made hot from time to time and carbolic acid vaporized by putting a teaspoonful or two into the heated spoon. The atmosphere should be so strongly impregnated with this vapor, according to Yeo, as to make the atmosphere unpleasant to others. These fumes should be kept up night and day. As a spray for direct inhalation he recommends the following:

℞.	Acidi carbol.	ʒi	4	
	Glycerini	ʒi	4	
	Sodii bicarb.	gr. x		66
	Aq. destil	℥i	32	

M. Sig.: Use as a spray in front of the mouth of the infant constantly, so that he is compelled to inhale it.

The urine should be under constant observation during above treatment and if any discoloration occurs the treatment should be suspended for twenty-four hours.

FOR THE PAROXYSMS.

The following combination is recommended to lessen the severity of the paroxysm and to render the expectoration less tenacious:

℞.	Sodii benzoatis	gr. lxxii	5	
	Sodii bicarb.	gr. xlviii	3	20
	Ammonii chloridi	gr. xxiv	1	66
	Aquæ chloroformi	℥i	32	
	Aquæ anisi, q. s. ad	℥iii	96	

M. ft. mistura. Sig.: One to four teaspoonfuls according to the age of the child, in a little hot milk, every four hours.

Bamberger recommends the following the moment the attack comes on.

℞.	Sodii bicarb.		
	Sacchari, āā	ʒii	8

M. Sig.: Dissolve a small amount of the powder in hot water and give to the patient as the paroxysm of coughing comes on.

Dujordin-Beaumetz recommends the triple bromids for relief of the paroxysm as follows:

℞.	Ammon. brom.		
	Sodii brom.		
	Potassii brom. āā	ʒss	2
	Syr. chloralis	℥i	32
	Aquæ, q. s. ad	℥iv	128

M. Sig.: One teaspoonful or more according to age, in milk night and morning.

Roth recommends the following:

℞.	Acidi carbol.	gr. xv	1	
	Spts. vini rectif.	m. xv	1	
	Tinct. iodi	m. x		66
	Tinct. belladonnæ	m. xxx	2	
	Syr. papaveris	ʒiiss	10	
	Aq. menth. pip. q. s. ad	℥ii	64	

M. Sig.: One teaspoonful every two hours for a child between one and two years of age; half the quantity diluted with water for infants under one year of age.

HEROIN IN WHOOPING COUGH.

Dr. H. H. Haralson, of Vicksburg, Miss., recommends the administration of heroin, beginning early in the attack and continuing it through the catarrhal and paroxysmal stage. During the last stage he recommends tonics, good nourishment and proper hygienic surroundings. The following combination is employed by him:

R.	Heroin hydrochlor.	gr. ¼ to ½		015-03
	Tinct. belladonnæ	ʒi	4	
	Spts. frumenti	℥i	32	
	Syrupi simplicis, q. s. ad	℥iv	128	

M. Sig.: One teaspoonful every five or six hours.

Dr. Haralson seems to be very enthusiastic over his success in ameliorating the paroxysm and lengthening the time between the paroxysms as well as cutting short the duration of the disease.

TREATMENT OF WHOOPING COUGH BY IRRIGATION OF THE NARES.

W. Lattey, according to *British Medical Journal*, states that the irrigation of the nares in pertussis should be more frequently employed. The child should be rolled up in a shawl with the arms confined, and placed face downward across the nurse's lap. Tepid water should first be used with a soft india rubber tube attached to the syringe. This should be followed by some antiseptic solution. The same treatment should be carried out with both sides.

Treatment of Erysipelas.

J. Hays, in *Jour. de Méd. de Paris*, recommends the following as a lotion in the treatment of erysipelas:

℞.	Acidi carbol.		
	Tinct. iodi		
	Alcoholis, āā	ʒss	2
	Olei terebinthinæ	ʒi	4
	Glycerini	ʒiss	6

M. Sig.: For external application.

Every two hours the erysipelatous part may be painted with this liquid as well as a small zone of the surrounding healthy tissues, and the whole covered with aseptic gauze.

A Sedative in Tubercular Meningitis.

The *New York Med. Jour.* recommends the following, as advised by Malba, to combat the agitation, the cries and convulsions in tubercular meningitis.

℞.	Strontii bromidi	gr. xv	1	
	Chloralis hydratis	gr. viiss		5
	Syr. Valerianæ	ʒv	20	
	Syr. menthæ	℥ii	64	

M. Sig.: One teaspoonful every half hour until quiet is obtained.

Intestinal Tuberculosis in Infants.

The following is noted in *New York Med. Jour.*:

R.	Argenti nitratis	gr. ii		12
	Pulv. amyli			
	Pulv. altheæ, āā	gr. v		33

M. ft. pil. No. xv. Sig.: One pill to be taken daily for three consecutive days after the administration of a light saline aperient.

If the diarrhea does not stop, the dose should be raised to two or even three pills daily during two consecutive days. This treatment is suitable for children ranging in age from 5 to 10 years.

For young infants the following is recommended:

R.	Argenti nitratis	gr. 1/6		01
	Syrupi idei	℥iss	48	
	Aq. destil. q. s. ad	℥iii	96	

M. Sig.: From a dessertspoonful to the entire draught according to age once or twice daily.

Absorption of Drugs by the Bladder.

Barbiana, according to the *Ther. Gaz.*, has found by experimental research that dilute solutions of various drugs, with the exception of iodin, are never absorbed by the bladder at first irrigation, but that if consecutive irrigations are made there is fairly active absorption. This he attributes to certain functional disturbances of the epithelium incident to the mechanical action of the lavage upon the vesical walls, since such absorption may take place without further alteration of this epithelium. He believes that the complete retention is in itself sufficient to produce such changes in the vesicular wall as are calculated to encourage absorption.

Salivation Following Ether Narcosis.

The salivation in ether anesthesia is usually excessive and very often is a factor in the cause of bronchitis and pneumonia following its employment.

Dr. W. Reinhard, as stated in *Merck's Archives*, recommends the following as a preventive:

R.	Atropinæ sulphatis	gr. 1/6		01
	Morphinæ hydrochloratis	gr. iii		20
	Aq. destil. q. s. ad	ʒiiss	10	

M. Sig.: Inject from eight to sixteen drops, according to the condition of the patient.

Treatment of Umbilical Hernia.

The *Med. Record* makes a note of the treatment of umbilical hernia according to the method of J. C. Hubbard, by means of adhesive plaster strapping. He states that the younger the child the earlier the cure is to be expected. The failure of cure and the danger of recurrence are slight. The author reports 28 cures out of 60 cases.

Pelletierin Tannate in Tapeworm.

The following combination containing pelletierin tannate has been used with almost uniform success in treatment of tapeworm, but it disturbs the stomachs of some patients:

R.	Oleores. aspidii	ʒiv	16
	Olei terebinthinæ	ʒii	8
	Pelletierin tannatis	ʒi	4
	Spts. chloroformi	ʒi	4

M. Sig.: Shake well. One teaspoonful in the morning on an empty stomach followed in about two hours by a saline cathartic.

Treatment of Tabes Dorsalis.

Collins, in *New York Med. Rec.*, summarizes the treatment as follows: 1. The determination as to whether antispecific treatment shall be employed. 2. The utilization of electricity, hydrotherapy, massage and counterirritation. 3. The education of the ataxic members, the rehabilitation of purposeful movements. 4. The relief of subjective symptoms, such as pain, crises, dereliction of bladder function, ocular paralyses, amaurosis and trophic disturbances. 5. Adopt a plan of treatment and carry it through.

It might be added in addition to Dr. Collins' statements that the value of antispecific treatment is questionable unless the symptoms of tabes come on comparatively early after the infection. In other words, if tabetic symptoms do not make their appearance earlier than five years or if the syphilis in its active stage has received strong treatment the employment of mercury and the iodids is usually productive of harm. On the other hand, too much stress can not be placed upon the value of exercise to re-establish co-ordination after Fraenkel's methods, while inactivity and disuse greatly decrease muscular control as well as discourage the patient.

Medicolegal.

Basis of Recovery for Services as Health Officer.—The Court of Appeals of Kentucky holds, in Henderson County vs. Dixon, that where an action is brought for the recovery of compensation for services alleged to have been rendered as health officer, and the appointment of the claimant is traversed by the answer to his petition, it is incumbent upon him to prove the organization of the county board of health, and also his appointment to the position claimed by him. It is further of the opinion, too, that such appointment should be proven by the records of the county board, or some reason given for the introduction of oral testimony. Again, when the appointment is denied, it holds that it is a question of fact for the jury to find that the claimant was duly appointed, before it can, in any event, allow him any compensation. Then, complaint was made in this case of the admission of testimony, in this: that the witnesses, in fixing a reasonable compensation, were permitted to base their opinion as to the value of services upon the standing of the claimant as a physician. But the court holds that it was competent to show that he was a physician of good standing and of long practice, and that the jury might take such facts into consideration in determining the value of his services, though the criterion of recovery, if entitled to recover at all, was reasonable compensation.

License a "Right"—Validity of Act as to Revoking.—The license to practice medicine which one receives, the Court of Appeals of Kentucky declares, in Matthews vs. Murphy, is certainly a "right" or "estate." Then it takes up the question of whether a person having fitted himself for this learned profession, and having been licensed to practice the same, the state board of health has the right to charge him with "unprofessional conduct likely to deceive or defraud the public," and erect a standard by which that conduct is to be measured, and if in its judgment he does not meet its requirements summarily deprive him of a right or estate or both. Referring to the Kentucky statute bearing on the subject, one section of which provides that the board may refuse to issue a certificate to practice medicine to any individual guilty of grossly unprofessional conduct of a character likely to deceive or defraud the public; and it may, after due notice and hearing, revoke such certificates for like cause, the court remarks that the statute does not prescribe the manner by which a physician may regulate his conduct. It does not advise him in advance what act or acts may be in violation of its provisions. He is not told what is lawful or unlawful. He might do an act which he regarded as entirely proper, which neither violated moral law or involved turpitude, still such acts might, in the opinion of the state board of health, amount to unprofessional conduct, and which in its opinion did or was calculated to deceive or defraud the public. The physician who did the act of which complaint was made before the state board of health could not know at the time the act was done what standard would be thereafter erected by the board by which its effect was to be determined. As the statute does not advise him beforehand as to what is unprofessional conduct, he could not knowingly or intentionally be guilty of it. In other words, the legislature, in effect, has attempted to commit to the state board of health the right, after the physician has done some act, to determine what its effect is to be, and if, in its judgment, he should be deprived of the right to practice his profession, it can inflict the punishment upon him by revoking his license. Besides, what the present state board of health and diminution of the latter. This also occurs after repeated stimulation of the reflexes; the cutaneous reflexes become weaker and weaker while the tendon reflexes become more and more exaggerated. Contracture is an exaggeration of the muscle tonus and may be due to inhibition of the antagonist muscle, or to a lesion of the tissues surrounding the central or peripheral motor neurons. There is no essential difference between the contracture in convulsions and that of hemiplegia, but in the pseudo-contracture of hemiplegia, with retraction of the tendons, there is evidently some alteration of the peripheral motor neuron with interference with its trophic function. Muscular hypertonicity does not necessarily coincide with exaggerated tendon reflexes—another argument in favor of their anatomic independence. The amount of contracture is usually proportional to the vigor of the muscle. Although some disturbance in the central or peripheral motor neurons is the principal, if not the only cause of contracture, yet there is considerable difference between the contracture due to each.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

Removal of Lanugo and Hairs.

A subscriber asks for a safe method (not electrolysis) of permanently removing superfluous hair, especially lanugo of the upper lip of girls.

There is no method of permanently removing hairs other than by electrolysis. This should not be attempted in such cases as mentioned above. A growth of coarse hair will recur even after electrolysis.

Treatment of Pertussis.

Just at this time of year pertussis seems to be very prevalent in some localities. This time in the year is certainly favorable to the prognosis of the disease. The little patients can be kept in the open air, and not housed in close rooms, which lessens the number of paroxysmal attacks of coughing as well as the severity of the attacks. The medicinal treatment is divided into the antiseptic, the anti-catarrhal and the sedative treatment.

Yeo is convinced that carbolic acid inhalations is of great value in the antiseptic treatment of this disease. He places the child in a small room containing an open fire-place; a large iron spoon should be made hot from time to time and carbolic acid vaporized by putting a teaspoonful or two into the heated spoon. The atmosphere should be so strongly impregnated with this vapor, according to Yeo, as to make the atmosphere unpleasant to others. These fumes should be kept up night and day. As a spray for direct inhalation he recommends the following:

℞.	Acidi carbol.	ʒi	4	66
	Glycerini	ʒi	4	
	Sodii bicarb.	gr. x		
	Aq. destil	℥i	32	

M. Sig.: Use as a spray in front of the mouth of the infant constantly, so that he is compelled to inhale it.

The urine should be under constant observation during above treatment and if any discoloration occurs the treatment should be suspended for twenty-four hours.

FOR THE PAROXYSMS.

The following combination is recommended to lessen the severity of the paroxysm and to render the expectoration less tenacious:

℞.	Sodii benzoatis	gr. lxxii	5	20
	Sodii bicarb.	gr. xlviii	3	66
	Ammonii chloridi	gr. xxiv	1	
	Aquæ chloroformi	℥i	32	
	Aquæ anisi, q. s. ad	℥iii	96	

M. ft. mistura. Sig.: One to four teaspoonfuls according to the age of the child, in a little hot milk, every four hours.

Bamberger recommends the following the moment the attack comes on.

℞.	Sodii bicarb.		
	Sacchari, āā	ʒii	8

M. Sig.: Dissolve a small amount of the powder in hot water and give to the patient as the paroxysm of coughing comes on.

Dujordin-Beaumetz recommends the triple bromids for relief of the paroxysm as follows:

℞.	Ammon. brom.		
	Sodii brom.		
	Potassii brom. āā	ʒss	2
	Syr. chloralis	℥i	32
	Aquæ, q. s. ad	℥iv	128

M. Sig.: One teaspoonful or more according to age, in milk night and morning.

Roth recommends the following:

℞.	Acidi carbol.	gr. xv	1	66
	Spts. vini rectif.	m. xv	1	
	Tinct. iodi	m. x		
	Tinct. belladonnæ	m. xxx	2	
	Syr. papaveris	ʒiiss	10	
	Aq. menth. pip. q. s. ad	℥ii	64	

M. Sig.: One teaspoonful every two hours for a child between one and two years of age; half the quantity diluted with water for infants under one year of age.

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Dr. H. H. Haralson, of Vicksburg, Miss., recommends the administration of heroin, beginning early in the attack and continuing it through the catarrhal and paroxysmal stage. During the last stage he recommends tonics. good nourishment and proper hygienic surroundings. The following combination is employed by him:

R.	Heroin hydrochlor.	gr. ¼ to ½		015-03
	Tinct. belladonnæ	ʒi	4	
	Spts. frumenti	℥i	32	
	Syrupi simplicis, q. s. ad	℥iv	128	

M. Sig.: One teaspoonful every five or six hours.

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	Olei terebinthinæ	ʒi	4
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M. Sig.: One teaspoonful every half hour until quiet is obtained.

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The following is noted in *New York Med. Jour.*:

℞.	Argenti nitratis	gr. ii		12
	Pulv. amyli			
	Pulv. altheæ, āā	gr. v		33

M. ft. pil. No. xv. Sig.: One pill to be taken daily for three consecutive days after the administration of a light saline aperient.

If the diarrhea does not stop, the dose should be raised to two or even three pills daily during two consecutive days. This treatment is suitable for children ranging in age from 5 to 10 years.

For young infants the following is recommended:

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	Syrupi idei	℥iss	48	
	Aq. destil. q. s. ad	℥iii	96	

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Medical Books—Reputation for Skill as Abortionist.—The rule in Kentucky, as it is at common law, the Court of Appeals of Kentucky says, in Clark vs. Commonwealth, is that books on scientific subjects are not admissible to prove the facts treated of in them. But that is not saying that such books, or, more particularly, medical books, may not be read to the jury for any purpose, otherwise, as the court suggests, an ignoramus in a profession might, by an assertion of learning, declare the most absurd theories to be the teachings of the science of which he is a professed expert, and, when pressed upon cross-examination as to either his own experience or the basis of his learning, would be enabled to hide behind the formidable name of some standard author, and thus foist upon the jury a most hurtful falsehood as a scientific deduction, asserted by the most eminent in the profession, solemnly declared and promulgated by him for the guidance of his brethren and the service of mankind. Therefore, in a case where such a witness (as for example, a physician) makes such an attempt, it is just and reasonable, the court holds, that the opposite side should be permitted to test the truthfulness of his statement, and expose his ignorance or mendacity by either compelling him to admit upon an inspection of the authority that it does not sustain his views, or by reading the authority to the jury to prove that it does not, and that the witness, either through ignorance or base motive, has falsely deposed. Then, the testimony of all the medical witnesses in this case being that certain lacerations indicated that they were made by a bungler, the court holds that it was competent for the prosecution to show, if it could show, by those personally acquainted with the skill of the accused as a surgeon and physician, that they knew him to be unskilful. But it was not competent for the commonwealth to prove the extent of his skill as a surgeon or physician by hearsay or reputation. And when the commonwealth introduces evidence attacking the professional ability or skill of a defendant, it necessarily follows that he should be permitted to prove affirmatively that he is a skilled surgeon, and this he may do, if he can, by those acquainted with his skill; and certainly those who have been his patients, and have had the very best opportunity of judging of that skill, should be permitted to testify. What his reputation is can not be proved for him any more than it can be against him, the question being as to what is the fact as to his being skilful. Evidence having been suffered to go to the jury from which it would appear that the accused was a professional or habitual abortionist, the court says that if it was shown or admitted that he had committed the abortion charged in this case, but attempted to justify it upon the ground of necessity, it is clear that the evidence would have been competent to prove his motive and intent, and to rebut or negative the idea that he was acting upon his professional judgment, and under a necessity of saving the life of the mother. On the other hand, as the purpose and effect of the evidence in this case was not so much to show intent or motive, as it was to establish primarily the guilt of the accused as to having perpetrated the act of abortion, in the opinion of the majority of the court the admission of this evidence was error, and it should have been rejected.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

American Medicine (Philadelphia), August 24.

1 *An Ideal Colony for Epileptics, and the Necessity for the Broader Treatment of Epilepsy. William P. Spratling.
2 Cerebral Concussion, with Retinal Changes. L. A. W. Alleman.
3 *Indications For and Against Total Removal of the Human Stomach. George Childs-MacDonald.
4 *The Outlook of the Medical Man To-day. John Milton Dodson.
5 *Statistical Note Concerning the Contagiousness of Tuberculosis Pulmonalis. E. L. Shurly.
6 *Carcinoma of the Breast. Carl V. Vischer.
7 *Peculiar Nervous and Urinary Manifestations Following La Grippe in the Aged. O. P. Kernodle.

Medical Record (N. Y.), August 24.

8 *The Prognosis of Traumatic Hysteria, Based upon the Subsequent Histories of a Number of Litigated Cases. Pearce Bailey.
9 *Infantile Typhoid Fever. August A. Strasser.
10 A Series of Mastoid Operations. Charles H. May.
11 *The Zoological Distribution of Tuberculosis. Woods Hutchinson.
12 *Bifocal Lenses; What Area Shall Be Devoted to the Short Focus. John E. Weeks.

New York Medical Journal, August 24.

13 *A Case of Actinomycosis Hominis, with Remarks Concerning the Differential Macroscopic Diagnosis Between Actinomycotic and Tuberculous Peribronchitis. Gustav Fuetterer.
14 Remarks upon the Treatment of Hip Disease, and Presentation of a Further Modification of the Hip Splint. John Dane.
15 *The Treatment of Acute Hip Disease, with Description of a Splint. Robert W. Lovett.
16 A Case of Angeio-Sarcoma of the Nose. Stanley S. Cornell.
17 *The Importance of an Early and Radical Climatic Change in the Cure of Pulmonary Tuberculosis. C. F. Gardiner.
18 Sulphuric Ether in the Removal of Ceruminous Plugs. E. L. Meierhof.

Medical News (N. Y.), August 24.

19 *Further Notes upon the Diagnostic Test of Tuberculin. Edward O. Otis.
20 *A Study of Burns, with a Plea for Their More Rational Treatment. Frederic Griffith.
21 *Carbolic Acid in Burns. Otto L. Muench.
22 *Inertness of Petroleum Compounds When Given Medicinally. Robert Reyburn.
23 Strangulated Hernia of the Bladder; Ruptured Sarcoma of the Testis Mistaken for Strangulated Hernia. Thomas H. Manley.

Boston Medical and Surgical Journal, August 22.

24 *Treatment of Delirium Tremens. J. Frank Perry.
25 *On the Effect of Alcohol. H. G. Beyer.
26 *The Management of Delirium Tremens, with the Report of a Case. V. A. Ellsworth.
27 *Myomectomies for Fibroids During the Child-Bearing Period. W. H. Baker.

Philadelphia Medical Journal, August 24.

28 Slow Pulse, with Special Reference to Stokes-Adams Disease. (Continued.) Robert T. Edes.
29 *The Intimate Action of the Silver Nitrate Injections in the Treatment of Phthisis. Thomas J. Mays.
30 Peliosis Rheumatica. T. Avery Rogers.
31 Is the Central Fissure Duplicated in the Brain of Carlo Giacomini, Anatomist? Edward A. Spitzka.
32 The Foundations of Faith in Medicine. A. W. Crane.

St. Louis Medical Review, August 24.

33 Report of Two Cases of Pregnancy Requiring Operation. 1. Fibromyomata Complicating Pregnancy. 2. Extra-uterine Pregnancy. H. S. Crossen.
34 Foreign Bodies in the Lungs. Theodore Potter.

Cincinnati Lancet-Clinic, August 24.

35 The Prognosis of Apoplexy. Charles J. Aldrich.
36 *Is Water Necessary for the Cleansing of Floors? W. O. Owen.

Northwestern Lancet (Minneapolis), August 15.

37 A Case of Rhinoplasty, with Use of a Buried Metal Support. J. Clark Stewart.
38 The Essentials for the True Dignity of the Medical Profession. F. E. Bissell.
39 Smallpox in Minnesota. Theo. L. Hatch.

Annals of Surgery (Philadelphia), August.

40 *Intraperitoneal Rupture of the Bladder Treated by Laparotomy and Suture. Samuel Alexander.
41 *Strangulation of the Testis by Torsion of the Cord. Charles L. Scudder.

42 *Fracture of the Carpal End of the Radius, with Fissure or Fracture of the Lower End of the Ulna, and Other Associated Injuries. Carl Beck.
43 *An Operation for Saddle Nose. Fred Walker Gwyer.
44 *The Artificial Production of Connective Tissue by Means of Injection of Agar-Agar. Simon Pendleton Kramer.
45 *An Operation for the Radical Cure of Umbilical Hernia. William J. Mayo.
46 Sarcoma of the Wall of the Thorax. Charles B. Porter.
47 Congenital Anterior Dislocation of the Tibia Treated by Arthrotomy. John B. Roberts.
48 Cancrum Oris Successfully Treated by Excision and the Cautery. A. Z. C. Cressy.
49 Forward Dislocation of the Semilunar Bone. Percival R. Bolton.

Medical Times and Register (Philadelphia), August.

50 Motor Insufficiency of the Stomach. S. C. Norris.
51 *The Ambulatory Treatment of Fractures. Frederick Rustin.

Peoria Medical Journal, August.

52 Neurasthenic Asthma. Charles H. Brobst.
53 Legal Responsibility for Burns. O. B. Will.

Journal of Nervous and Mental Diseases (Nyack, N, Y.), August.

54 A Case of Peripheral Pseudo-Tabes with Exaggerated Reflexes. Autopsy and Microscopical Examinations, Showing Degeneration of the Peripheral Nerves and No Lesions of the Spinal Cord. Charles K. Mills.
55 *A Study of Insanities of Adolescence. Wm. Pickett.
56 A Large Subcortical Tumor of the Occipital Lobe, Producing Right-Sided Hemiparesis and Right Homonymous Hemianopsia Together with Wernicke's Pupillary Inaction Sign as a Distance Symptom. F. X. Dercum.
57 A Case of Astereognosis Resulting from Injury of the Brain in the Superior Parietal Region. William H. Teller and F. X. Dercum.

St. Louis Medical and Surgical Journal, September.

58 Report of Three Cases of Malignant Endocarditis: One Following Measles, Another Typhoid Fever in a Child and Simulating Splenic Lymphatic Leukemia, and Another Terminating in Recovery. Albert E. Roussel.
59 A New Bed Spring Especially Adapted to Hospital and Sickroom Purposes. A. Habermaas.
60 Asthma. Wm. Henry.
61 Comparative Treatment of Gonorrhea. L. Midy.
62 No Thieves in Germany—A Piece of International Medical History. Albert S. Ashmead.

Medical Mirror (St. Louis), July.

63 *Pulmonary Tuberculosis. H. Edwin Lewis.
64 *The Management of Fevers. I. N. Love.
65 A Remarkable American—Dr. William Pepper. Francis Newton Thorpe.

Journal of Eye, Ear and Throat Diseases (Baltimore), July-August.

66 Four Cases of Metallic Foreign Body in the Eyeball: One Case Ending Fatally; One Case with Wound of Lens Not Causing Traumatic Cataract, and Recovering with Perfect Vision. E. C. Ellett.

Medical Sentinel (Portland, Ore.), August.

67 *Division of the Fee. Robert L. Gillespie.
68 *Ophthalmia Neonatorum, Its Prevention and Treatment. Adolph Blitz.

Alabama Medical Journal (Birmingham), August.

69 Man's Predominant Passion—Sexual Instinct and Its Control. R. C. Bankston.
70 Spleno-Medullary Leukemia, with a Case. Edgar Allen Jones.
71 Cholera Infantum. J. C. Johnson.

American Medical Compend (Toledo, Ohio), August.

72 *Some Experiments in Pneumectomy. J. H. Jacobson.
73 The Life and Work of Louis Pasteur. A. D. Hobart.
74 Therapy of Protonuclein. C. S. Miller.
75 The Myometrium, Its Etiology and Physiology. (Continued.) Byron Robinson.

Canadian Practitioner and Review (Toronto), August.

76 *The Surgical Aspect of Gastric Ulcer. Henry Howitt.
77 Excision of the Upper Jaw for Sarcoma, with Presentation of the Patient and Specimen. Herbert A. Bruce.

New Yorker Medicinische Monatsschrift (N. Y.), August.

78 Ueber Luetischen Primaeraffect der Nase. W. Freudenthal.
79 Gynaecologische Krankheitsbilder von Allgemeininteresse. F. Foerster.

Medical Examiner and Practitioner (N. Y.), August.

80 *The Relation of Bodily Mutilations to Longevity. John Homans.
81 Arterial Hypertonus and Arteriosclerosis: Their Relations and Significance. William Russell.
82 The Pulse. Dr. Mahillon.
83 Examinations for Life Assurance. W. H. Pepler.
84 Two Infrequent Causes for Rejection: Renal Stone and Renal Tuberculosis. Henry Jacobson.

Post-Graduate (N. Y.), August.

85 *Indications for Operation on the Mastoid Bone. Wendell C. Phillips.
86 Congenital Malformations of the Rectum and Anus. Samuel G. Gant.
87 Chart of Work Done by the Lying-in Department of the New York Post-Graduate Hospital. Robert H. Halsey.
88 Mastoid Cases. Dr. Roosa.
89 Notes from the Clinics. *Dr. Caille.*

AMERICAN.

1. **Epileptic Colonies.**—The conditions for an ideal epileptic colony are discussed by Spratling, who insists on the importance of good water supply, drainage, etc. As regards location, he objects to too easy accessibility by outsiders, but still would wish to be in reasonable proximity to the centers of population from which the patients are received so as to have the advantages in obtaining supplies. He dwells on the importance of attractive landscape gardening and the value of the colony plan rather than large buildings containing great numbers of patients, and mentions the following requisites for colonization: 1. An administration building; 2, hospital building, complete and modern for the treatment of medical and surgical cases and having attached to it wings for receiving recent admissions. 3. Industrial buildings for educational and other purposes, proper farm equipment and a number of patient's cottages which he divides into three classes: 1. Those holding from 12 to 16 or 18 patients. 2. Those large enough to accommodate from 25 to 35, the most numerous class. 3. Infirmaries combining home and hospital for the use of perpetually bedridden and infirm patients. Homes for the employees should also be provided. The resident officers should include a medical superintendent, appointed by the managers, four or five assistant physicians, medical internes, pathologist, etc., these all appointed by the superintendent. The ratio of medical officers, not including the pathologist, should be one to every 100 patients. Other officers, such as steward, chaplain, matron, etc., should also be appointed by the superintendent and a training school for nurses should be an important feature of the institution.

3. **Gastrectomy.**—The advisability of complete excision of the stomach is treated of by Childs-MacDonald under the following heads: 1. The diagnosis and age. He would limit the operation to 55 in men and 60 in women, though this must not be absolutely the rule, as individuals differ. 2. The state of the blood. A high percentage of white cells means an unfavorable prognosis. 3. The absolute integrity of the heart, nervous, muscular and valvular, must be considered. A weak diffused pulse, arteries insufficiently filled, plus loss of tone, cardiac dilatation, organic valvular lesions, marked hypertrophy and muscular insufficiency, evidence of previous heart strain, atheroma, delirium cordis, irritability, all should prohibit operation. The heart should be in the best possible condition, or the patient's life may be lost by cardiac failure or shock. Other things being equal, workingmen and women furnish a more favorable prognosis than those who follow a sedentary or idle life. Total abstainers are favorable, while over-indulgence in liquor is a positive bar; even moderate beer drinkers are not good subjects. We must be sure there is gastric cancer and its location. The most favorable indications are a moderately dilated viscus with freely movable tumor situated to the right of the median line. A contracted or very dilated stomach, with a fixed or non-palpable tumor, or one located on a line extending from the center of the epigastrium to the anterior superior spine of the ilium on the left are decidedly unfavorable. Adhesions may be expected with all their complications, or disease may arise external to the stomach. If we have any grounds for suspecting that the disease has implicated the cardia, we should on no account attempt any operative procedure except to establish an opening between the stomach, jejunum or duodenum and skin, through which the patient may be fed. Twelve or fourteen months previous disease contra-indicates operation, while metastasis is an absolute bar. 6. The preparation of the patient should include absolute rest in bed for four or six days or more, with attention to excretions. Lavage of the stomach once in twenty-four hours, preferably at night, with some mild antiseptic, will relieve pain and lessen the catarrh. The patient

should be frequently and judiciously fed, to the capacity of his powers of assimilation, with peptonized milk, broths and gruels, both by mouth and rectum. The mind must be kept quiet and the patient amused. The liver and bowels should be kept active with small and repeated doses of podophyllin resin, in combination with similar doses of calomel followed by salines. The skin should also be treated with warm baths with soft green soap dissolved in alcohol. In addition to the food mentioned he gives 3 ounces of beef tea made by the cold and hydrochloric acid process. Food should be given every two hours during the day and twice during the night. Alcohol in the form of old pure brandy, well diluted, should be administered to the amount of 4 ounces in twenty-four hours at regular intervals; it strengthens the heart and retards waste. For the final two days he prescribes 1/100 of a grain of digitalin three times a day. The stomach should be well washed and a rectal injection given on the morning of the operation.

4. **The Outlook of the Medical Man To-Day.**—Dodson points out that only a moderate income can be expected as a rule from medical practice as compared with other successful occupations. He advises the physician to gain general culture outside of his own profession, not to neglect his social and political duties, but especially to remember that besides the care and study of his patients the largest hope lies along scientific lines. He points out that certain physicians have, under conditions that were not particularly favorable, done highly scientific and extensive work. For instance, there are physicians in small towns who conduct surgical clinics with success. Industry, honesty and a love of truth are essential.

5. **The Contagiousness of Tuberculosis.**—Shurly analyzes 130 cases observed during the year 1898 and finds that of these there were 9 doubtful cases. Of the remaining 121 there is a possibility of 9 only having originated through ordinary natural communicability; while on further analysis there is a possibility that only 5 so originated, and further, that of the whole number, 130, at least 112 were immediately preceded by some acute or subacute disease. The tendency of his paper is to minimize the importance of case-to-case contagion in consumption.

6. **Carcinoma of the Breast.**—In this condition the question of successful operation depends so much on its early performance that diagnosis becomes only secondary to treatment. Vischer finds that 80 per cent. of breast tumors were of this nature, while of the remainder 4 per cent. were sarcomas and the balance such as frequently undergo malignant change. He divides the breast for clinical purposes into four quadrants by two lines passing at right angles with the nipple. It is found that carcinoma is most frequent in the upper outer, and next in the lower outer quadrant. Sarcoma, a much rarer growth, is found most commonly in the inner upper segment. Retraction of the nipples is found comparatively seldom, and only where connective tissue enters largely into the formation. The form beginning with adenoma, gradually assuming epithelial change, is rather common, and is found in young women. The medullary form is most rapid in growth and shows an early tendency towards breaking down. Nodulation is significant of connective tissue hyperplasia and is of less importance than the mobility of the growth and its anatomic situation. The prime object of this paper is to attract attention to the early recognition of the condition. He suggests careful observation of any breast that has ever been the seat of inflammation. Attention is not apt to be called to this condition as subjective symptoms are few in the early stages. Of the 56 cases of removal occurring in private practice, of which he had a complete record, only about two-thirds have recovered. In multiparas, past the age of lactation, it would be far safer to remove all breasts which are the seat of tumors. In breasts that have had abscesses, any enlargement should be sufficient cause for removal.

7. **Influenza.**—Three cases are reported by Kernodle of la grippe in old people, showing peculiar nervous and urinary manifestations. Summarizing these he thinks that aged persons suffer more violently from la grippe than those in youth and vigor; the manifestations are more marked and profound in the aged; and never entirely disappear; nephritis and urinary disturbances are more pronounced and lasting, and there is a more decided tendency to recurrence, resulting in death; owing to the worn-out and deteriorated physical condition and lowered nerve resistance the results are more grave, the assaults more violent and profound and the death rate much higher in persons over 50 years.

8. **Traumatic Hysteria.**—Hysteria is a misunderstood condition, being a mental disease with physical manifestations. Bailey reports a number of cases illustrating this point. He thinks there is uncertainty regarding the prognosis in this as in all other mental affections. The patient may recover or may be a sufferer for years. Of the indications which enable us to make the prognosis, he mentions first heredity, but believes that it is very difficult to substantiate the teachings of Charcot that hysteria never develops except in degeneracy. Age is an important matter, and he believes that in healthy persons not over 35 or 40 years of age the chances of recovery are good, though not certain, but that, with increasing age, the chances become less. He thinks that immediately after an accident, if the patient could be isolated and cared for by a physician who understood the significance of the symptoms and the best way of treating them, we would have very little persisting traumatic hysteria. Such ideal conditions, however, are rarely possible, and sympathy, indulgence and suggestion may render the disease hopeless.

9. **Infantile Typhoid.**—Strasser has found in the majority of his own cases symptoms of typhoid infection at the end of the second week. The cases run about as follows: Few prodromata; incubation not noticeable; headache not severe in infants, though it may be intense in older children; both are liable to initial convulsions. The fever is usually the cause of anxiety and the call for the doctor. It runs a wide range, and is usually more or less rapid, though conforming somewhat to a fairly typical typhoid curve. The state of the bowels is of no diagnostic value. Bronchitis is common, remaining long in the congestive stage. Epistaxis may be quite frequent; the tongue is not characteristic; rose spots occur as in adults; there may be some suppression of urine and splenic enlargement is frequent, according to some authorities. The main symptom is subacute bronchial inflammation due to the excretion of the Eberth bacillus from the bronchi and this in children amounts to the main disease for the first few weeks. He reviews Jacobi's statement of the dangers of typhoid in children, and agrees with Noyes that, in spite of these, convalescence is more rapid than in the adult, the mortality is less and abortive cases are more frequent. The prime requisite in the treatment is an intelligent nurse. When the temperature reaches 102.5 or 103 F. and there is great irritability, threatening convulsions, and severe headache, it is time for the cold bath and pack. As regards antipyretics, he does not favor them. As to other medication, salol is good; in diarrhea the various bismuth preparations are best. If constipation is the feature, calomel is the best antiseptic. When there is perforation or even slight hemorrhage, turpentine is the internal sheet anchor, and for very distressing meteorism, it is very comforting in the form of stupes or enemata. Rest in bed, the use of fluid food, etc., are not necessary to mention. He warns against the use of ergot preparations for hypodermic injection. Convalescence should not be retarded, nor should solid or semi-solid food be withheld too long.

11. **Zoological Distribution of Tuberculosis.**—Hutchinson has studied for five years the mortality in the London Zoological Garden and finds an apparently greater susceptibility to tuberculosis among vegetarian animals and a much reduced susceptibility among meat eaters both in mammals and birds, though there are some serious exceptions to the apparent rule. The odd-toed ungulates among the vegetable-eaters have important resisting powers and seldom become infected. He finds the largest percentage of tuberculosis among the primates, and the lowest amongst the carnivora and marsupials. In birds the greatest percentage is among the gallinæ and the lowest among the raptores. The American monkeys which

take some animal food are much more free from tuberculosis than the old-world catarrhine form. As regards housing, he finds that the animals that can stay in better air are less affected. The carnivora seem in most cases to demand a higher degree of activity than the herbivora, and when from any cause this higher degree of vigor and dash has been acquired by herbivora, then immunity from tuberculosis follows. The conclusion to which this preliminary survey has led him is that the distribution of tubercle is a matter of vigor, endurance, and resisting power, rather than of race, food, or exposure to infection, and as these powers are usually higher in flesh eaters than in vegetable feeders, the former possess a marked relative immunity.

12. **Bifocal Lenses.**—Weeks discusses the disadvantages of these glasses and finds that after experiments with various devices, the best results can be obtained by the use of a paster of oval shape, which measures 10 mm. in its vertical and 15 mm. in its horizontal diameter, giving a field at the reading distance of approximately 7 in. in the horizontal, and 12.5 cm. (5 in.) in the vertical meridian. If the oval disc is placed 2 mm. above the lower edge of the distance lens it will permit of clear distance vision below, sufficient to enable the wearer to see the curb, descend stairs, etc., without trouble. It is sufficient to place the optical centers of the portion of the lens for reading at the center of the paster. The dispersion rays of light occasioned by the edge of the paster can be minimized by making the edge very thin. In his diagram he places the paster a little to the inner side of the center of the larger lens.

13. **Actinomycosis Hominis.**—The case reported by Fütterer is thoroughly studied, and he says in conclusion: That macroscopic diagnosis between actinomycosis and tuberculous peribronchitis is possible and not even difficult. In actinomycosis he finds small, sharply-defined, sulphur-yellow rings, with clear, round outlines, having little tendency to involve the lung substance. These rings show a decided tendency to grow toward the center of the lumen of the bronchus, which at last becomes entirely occluded. The color is important, for in tuberculosis this varies. Where there is caseation even, the yellow color has a more grayish tinge and is not uniform in quality. The tuberculous areas project above the surrounding tissues and have an uneven surface and irregular outline; there is not the same tendency to grow centrally and close up the lumen, but rather to spread peripherally and an early affection of the surrounding lung tissue is the rule. Tuberculous infection generally affects the apices first, but actinomycosis prefers the lower parts of the lungs.

15. **Hip-Joint Disease.**—The conclusions presented by Lovett are as follows: Cases of hip disease permitting not over 25 degrees of motion in flexion or extremely irritable cases should be treated by the best obtainable fixation plus traction. Treatment by recumbency is not generally necessary even in the most acute cases, if the apparatus described above is applied to the hip in the position of deformity. This deformity generally disappears under this treatment. The splint should be removed as seldom as possible, and the hip should not be disturbed by frequent examinations. Cases allowing 25 to 45 degrees of motion in flexion may be treated by Dane's splint with high shoe and crutches in preference to any other form of traction splint. Personally, he would extend the use of the spica traction apparatus to most of these cases in the hope of shortening the disease by over-efficient treatment, but that position could perhaps not be successfully defended. The use of the Davis-Sayre-Taylor long traction splint, with one or two perineal bands, should be limited to cases allowing well over 45 degrees of motion in flexion, and should be used with high shoe and crutches to prevent the intermittent traction necessarily incident to walking on the splint. It is probable that the more rational use of combined traction and fixation would lead to better results in conservative treatment in shortening the disease and improving the functional results than can be obtained by the routine use of traction.

17. **Climate in Tuberculosis.**—Gardner pleads for the importance of change of climate as a matter of treatment in tuberculosis. He claims that by change to a high, dry region, the organism undergoes formation of new cells, nutrition is stimulated, and isolation of tuberculous tissues is more rapid. In the winter the cold is more endurable and more beneficial than at lower altitudes, and the continuous sunlight is an effective germicide. The dryness of the air and the cool nights prevent exhaustion in the summer time. The electrical conditions are stimulating, The scenery has a physiologic value often overlooked. Climate comes in as such a factor that 15 per cent. better results can be obtained under home treatment of tuberculous cases in Colorado than in closed sanatoria in the East.

19. **Tuberculin.**—Otis has experimented with tuberculin as a diagnostic test in 36 cases of syphilis, or 35, throwing out one doubtful case. There were 6 undoubted reactions and 5 which he calls abortive reactions. Considering only the 6 we have 17 per cent. of reactions; including the abortive cases, we have 31 per cent. He does not find with Beck that one-half the cases of syphilis react to this test, but there does not seem to be any guide in the activity or quiescence of the disease as to whether or not the reaction is likely to occur. In his most violent reaction, in which the temperature went up to 104, the case was one of many years' duration and without active manifestations. He also examined 26 cases of suspected or proven tuberculosis, which gave some interesting and perplexing results. In 8 cases where the physical examination showed sufficient evidence of tubercle or where bacilli were found in the sputum, he had 4 reactions and 4 failures. In 3 cases where the tubercle bacilli were found in the sputum, 2 did not react. In one 7 milligrams were used and in the other 5 and 10. In the third case where 2, 5 and 8 milligrams were successfully used only a local reaction was obtained. He offers no explanation for such results. Of the remaining 18 cases of suspected tuberculosis there were 6 reactions and 12 failures. In none of the cases which failed to react could tuberculosis be more than suspected. A case of lupus of the face, besides giving a general reaction, showed a pretty local one. In using the tuberculin test for suspected tuberculosis, experience, he says, teaches us to look carefully for syphilis. He confesses that when he has a case of tuberculosis with tubercle bacilli in the sputum and failure to reaction, his confidence in the test is somewhat shaken, but it is well to bear in mind that there is always a chance of error and that we do not yet know what the minimum efficient dose is.

20. **Burns.**—Burns, according to Griffith, may be divided into two degrees of severity, the first class involving the skin only and the second including all others. The pathology of these is that of inflammation of the part locally affected. Early death and internal complications are due to direct action of heat, with fragmentation and vital change in the blood corpuscles. Later effects are due to infections taking place from the burned area. The granulations during the healing of burns are the determining factor in the amount of contraction and deformity. The greater the friction caused by irritation of any source, the larger the granulations, the greater the amount of connective tissue and the contraction. The local treatment from the earliest times has been along the lines of prevention of irritation, but the late advances in wound treatment have not been followed. The burned wound should be cleansed with the removal of as much burned, dead tissue as possible; the thoroughness with which this is done will determine the presence or absence of infection. Hydrogen dioxid to wash away the debris and render aseptic the denuded parts is the best antiseptic at our command. Rubber tissue in strips should be laid on the wound to prevent contact with absorbent dressing. The use of splints to secure relaxation and retention in obtaining rest for a burned part is of great importance, and is as much indicated in this form of injury as in fractures. The internal treatment is stimulative until reaction from shock has taken place, when it becomes supportive. Opium fills the indications for pain, internal inflammation, and diarrhea. The bowels and kidneys should be continually kept open, but enemas only should be employed.

Watchful attention must be given to early signs of internal complications of viscera.

21. **Carbolic Acid in Burns.**—Three cases are reported by Muench, one of his own experience and two others, in which pure carbolic acid was applied to burns, causing immediate cessation of pain with no subsequent swelling or inflammation. The corroded skin came off in a few days, leaving a new skin and causing absolutely no inconvenience or trouble, not even a scar or contraction of muscle. In one case the burn was very extensive, covering the entire head, face, neck and hands, and in this case he gave a hypodermic injection of morphin. The patient recovered without a single scar, although there was sloughing on the end of the nose and rim of the ears.

22. **Petroleum Compounds.**—Reyburn calls attention to the inertness of petrolatum when given internally. He says it passes unchanged through the intestinal tract and therefore is insoluble in the gastric juice and intestinal canal and can be recovered as a whole in the feces. Its usefulness as a remedy, therefore, must depend on its unirritating and demulcent properties.

24. **Delirium Tremens.**—Perry has no sovereign remedy for delirium tremens. He does not believe in the sudden withdrawal of alcohol in chronic habitués. It is his practice to put the patients on a liquid diet as nutritious as can be borne, a goodly quantity every two hours during the day. In mild cases he stops the alcohol at once; in severe ones it is seldom completely withdrawn before the fourth or fifth day. The quantity, however, is lessened and as substitutes he uses ammonia, camphor, hyoscyamus, valerian, capsicum, ginger, etc. The heart must be supported by strychnin, nitroglycerin, etc., and small doses of opium may be employed. He thinks chloral hydrate, alone or combined with potassium bromid, one of the best things there is in some conditions of insomnia. He has employed hyoscin hydrobromate, though this is not a safe remedy. A better agent is musk, but its high cost is prohibitive in many cases; apomorphia properly used is safe, but is usually pushed too far, as has been the case in the drink cures. Morphin is not constant in its action; in most cases it is quieting, but seldom efficient alone. When the patient goes to sleep he must not be disturbed, though the sleep may last fourteen or fifteen hours. The attendant should be fearless and humor the patients in a practical way. Some patients, however, are extremely obstinate, and may require restraint, though only as a last resort. Lying on the back, a spread eagle is made of the unfortunate by towels and sheets. The patient will tug at his fastenings and be irritated, but is finally exhausted and possibly will fall asleep.

25. **The Effects of Alcohol.**—Beyer finds alcohol is primarily a stimulant, but a protoplasmic poison. He criticizes Dr. Woodruff's expressed ideas as to its value in the tropics. He has seen very little good from giving it in tropical climates, though in some cases for temporary purposes he has employed it in the engine and fire-room force—one ounce of whisky every twenty-four hours. The temperance movement generally has done much good, and he mentions an experiment of practical total abstinence in a recent Dutch expedition in the East Indies with extraordinarily good results.

26. **Delirium Tremens.**—Ellsworth differs from Perry in that he would cut off alcohol in every case, give milk and water abundantly and avoid hypnotics. In his experience with over 500 cases, he has never used restraint or allowed alcohol. He has had only two fatalities, and these patients were in a state of collapse when he received them. He attributes his success to the perfect freedom he allows the patients, that is, in not hampering their movements, in keeping the room thoroughly ventilated, giving good nourishment at short intervals, and the absolute prohibition of alcohol. He reports a case.

27. **Myomectomies.**—Baker reports a case of myomectomy, and in reviewing it makes the following suggestions: 1. The importance of performing myomectomies in preference to hysterectomies in most of the cases of fibroids during the child-bearing period. 2. Even though the patient and her friends may prefer a total hysterectomy for various reasons, principally among which are the facts of the extreme suffering of the patient or the great loss of blood, which make them desirous of absolutely putting an end to the menstrual process, it is generally better surgery to remove the cause of the suffering, and leave the uterus and ovaries in a state which may be of great future usefulness and certainly able to perform their normal functions. 3. The greater length of time necessary to perform several myomectomies in any given case is usually more than overbalanced by the complete insurance of the integrity of the organs involved.

29. **Intimate Action of Silver Nitrate.**—Mays bases his treatment on the theory that pulmonary tuberculosis is, in the majority of cases, primarily a neurosis in which the vagi participate and that the pulmonary disintegration is secondary. He believes direct stimulation of the vagi favorably influences the condition of the lungs. The mechanism of silver nitrate injections is of such a nature as to stimulate the vagi to a more vigorous action and in this way they create antagonism to disease that diffuses itself throughout the manifold ramifications of these nerves.

36. **The Cleansing of Floors.**—Owen recommends a finish on hospital floors of wax, linseed oil, turpentine, floor finish and benzine in the following proportion: Wax, 5 pounds; linseed oil and turpentine, 2 gallons each; floor finish (permanere), 1 gallon, and benzine, 10 gallons. This is applied once a week and laid on with a piece of cotton, brushed and polished with a cotton mop. He believes that too much floor scrubbing is responsible for some of the sickening odors which are due to decomposition taking place both in and on the floors. The danger of fire from the use of this material is very slight if only a small quantity is kept on hand to use at a time.

40. **Intraperitoneal Rupture of the Bladder.**—In case of intraperitoneal rupture of the bladder treated by laparotomy, it is evident, according to Alexander, that successful results in every case depend upon three things: 1. Surgical interference at the earliest possible moment after the accident. 2. Thorough cleansing of the peritoneal cavity. 3. Perfect closure of the bladder wound by sutures. The great object of the operation is to prevent peritonitis and septic infection, and he asks how can we prevent delay of operation in these cases and suggests that suprapubic incision, and exploration of the prevesical space is the best method. The injection and infiltration tests are liable to be misleading and are dangerous. Asepsis of the peritoneum can be best obtained by thorough flushing of the cavity with hot normal salt solution. For closure of the bladder wound he has used silk, that is, a layer of interrupted Lembert sutures and a second layer of crossed mattress sutures. The main point is not the suture material, provided it will not be too quickly absorbed, but the manner in which the suturing is done. He reports an operation and gives a tabulated statement of cases from the literature.

41. **Torsion Strangulation of the Testis.**—Scudder reviews the conditions and the literature of this disorder and finds that, in the majority of cases, its causes are rather mysterious, though slight trauma may produce it. He has found 31 cases in the literature and reports an additional one.

42. **Fracture of the Carpal End of the Radius.**—The different forms of possible fracture of the carpal end of the radius are discussed and illustrated both by diagrams and skiagraphs. The advantages of the Roentgen ray in this injury are recounted; they have thrown new light upon its possibilities. Beck concludes that in many cases of fracture of the carpal end of the radius producing so-called sideward pushing of the ulna, there is, in fact, a fissure or fracture of the ulna which was not recognized in former years, and this is seen only through a good skiagraph made with a good tube. The treatment of the different forms is described and the importance of perfect replacement insisted upon.

43. **Saddle Nose.**—The operation of Gwyer is described as follows: A longitudinal incision in the middle line at or near the root of the nose, depending on the amount of deformity

and carried downward towards the tip of the nose. At a point depending on the conditions existing, the line of incision divides into two lines separating more or less and coming together again below the tip, forming an ellipse. The skin included in the ellipse is removed. The skin is then dissected loose for a sufficient distance on either side, especially in the region of the deformity. A flap is next dissected out of subcutaneous tissue, and perhaps cartilage, starting at or below the tip and raising the flap as far as the lower end of the depression. The flap is made thicker in the middle than at the sides or ends and the thickest part placed in a position corresponding to the most depressed part. It is better not to carry the upper end of the incision too high, but having loosened the skin at that point, to tuck the free end of the flap under it. Such a course makes a smaller scar and union is prompter and firmer. After raising this flap, a portion of the cartilage lying on either side of the median line of the tip is removed, the amount depending on the spread of the nostrils. The suturing should be done with a small needle, preferably with horse-hair. The approximation should be very accurate and not too tight. The stitches should be removed as soon as possible. The quantity of skin removed in the ellipse depends on the amount of broadening of the tip and alæ. A narrow piece should be first removed, and subsequently more if necessary. The skin is then approximated with very fine sutures throughout the length of the incision, a figure-of-eight suture being used at the tip to approximate the deeper parts, and the wound is covered by a light dressing of collodion, iodoform and gauze. The advantages of this operation are, in his opinion: 1. The absence of foreign bodies. 2. Correction made with living attached tissue, having its own blood supply. 3. Ability to correct at the same time minor deformities. 4. Having the field of operation in sight. 5. A minimum of scar.

44. **Agar-Agar Injections for the Production of Connective Tissue.**—Kramer has experimented with melted agar jelly introduced in the fluid state into one side of the chest in rabbits. The animals were killed after a varying number of days. In the animal killed forty-eight hours after injection there was found a mass that had lost the gelatinous appearance of jelly and resembled an antemortem heart clot more than anything else. On microscopic examination it was found that the jelly had become honeycombed with small round cells. A section taken from a mass obtained from an animal killed after seven days showed still further infiltration and signs of beginning degeneration. In one taken after twelve days there were many fibroblasts and new blood vessels beginning to be formed. The mass of agar jelly at first infiltrated by small round cells is being replaced by vascularized connective tissue. After thirty days a newly-formed blood vessel could be plainly seen in the section. He thinks these experiments will be found to be of some surgical value. It is very often desirable to produce an artificial growth of connective tissue by means of some such injection. In several cases of inguinal hernia the sac and canal have been filled with the material, which has become organized and cured the defect. The permanency of the cure will be determined only by time.

45.—See abstract in The Journal, xxxvi, p. 1582.

51.—See abstract in The Journal, xxxvi, p. 126.

55. **The Insanity of Adolescence.**—Pickett analyzes 58 cases of dementia and finds that a considerable proportion of these occurred in patients whose insanity began between the years of 15 and 30. He shows by a graphic method—a sort of birdseye view—that the great majority of cases come under what is called katatonia or the dementia precox of Kraepelin. On the average, two-thirds of the cases met with at the Philadelphia Hospital between the ages of 15 and 30 become chronic dements or die of intercurrent disease, an important clinical fact. He insists on the importance of using prognosis as a basis of classification, making the conventional forms only a primary and secondary classification for convenience sake.

63. **Pulmonary Tuberculosis.**—Lewis discusses the diagnosis, etiology, symptoms, prognosis and treatment of tuberculosis. As regards heredity he thinks there is little reason to consider it important, but he believes also that the human system is normally resistant to the invasion of tubercular germs. The predisposing cause is, in fact, decrease of vital resistance or special susceptibility. The exact nature of this is little known; it probably consists of a certain chemical or histological condition of the lymph nodes due to hereditary tendencies or conditions of environment, which fail to arrest or inhibit the growth and the ingress of germs; or second, of some retrograde metamorphosis of the structure in any part of the body, generally in the lungs, or a trophic, traumatic or toxic influence favoring the invasion. Among the causes which diminish the vital resistance he puts air starvation first, either deficient supply of good air or incapacity to receive it. Next to this come gastrointestinal disorders. The symptoms are discussed at length. He does not lay great stress on the absence of tubercle bacilli, for they may not be readily found. The temperature range is one of the earliest symptoms. He is in the habit of loaning an accurate thermometer to intelligent patients so that they can keep a two or four hour record of their temperature. Cough is also a symptom of which patients may make little; it is not necessarily spasmodic. Emaciation is a symptom of much importance. The symptom of early hemorrhage has not been, as a rule, common in the incipient stage in his experience. The physical signs are briefly noticed and the principal points of the diagnosis are, in his opinion, careful attention to the temperature range, character and frequency of the pulse, cough, changes in body weight, and sputum examinations. The prognosis is far better than it used to be. We should build up the vital resistance, encourage regular habits, use hydrotherapy, good nutrition, and compulsory notification. He believes in over-nutrition. He considers raw eggs excellent, and thinks that as many as ten or twenty a day are justifiable in feeding. Of all the drugs that have been tried, strychnin stands at the head and he would give it freely. Next to this comes arsenic and if the cough requires some amelioration, guaiacol carbonate combined with codein or heroin is very efficient. He has little faith in creosote. Atropin may be useful in night sweats. The average patient is markedly benefited by an alcohol bath and rub down at bedtime. Alcoholic stimulants have very little use internally. While admitting the importance of the stomach and its condition as pointed out by Osler, Lewis would go farther and show that the cure depends entirely upon absorption, assimilation of nutriment. If the body metabolism is such that its tissues are able to acquire an amount of nutrient and reconstructive material greater than the general waste, the patient will live, if not, he will die.

64. **Management of Fevers.**—Love insists on the importance of attention to the digestive tract in fevers particularly. He thinks that the liberal use of water and flushing of the alimentary canal are beneficial. In the management of fevers of whatever origin or cause he recommends the following: 1. Prompt, potent purgation. 2. Keeping up the action of all the eliminating organs to their full extent, and, the lungs are the most important of these, an abundance of oxygen, and after this comes water in abundance. 3. Intelligent attention to nutrition, which demands the complete withholding of food in the beginning for several days and later only the blandest and most digestible foods in small quantities. The pushing of food can not be safely done until the secretions have all been corrected, and it is evident that the digestive organs are in no way crippled. 4. Temperature can be best held down and the nervous strain tranquilized by hydrotherapy and flushing and the easiest way is the best. The cold bath not only helps the excretion, but quiets the fever. 5. We may also use gentle manual massage and even some of the manipulative methods of the osteopaths for soothing purposes and as a stimulant and tonic. 6. Sleep. Complete rest at proper intervals, physically and mentally are essential. 7. "The Big Four Route" to health in all diseases including fevers is first, elimination; second, disinfection; third, nutrition, this means little or no food during the acute stage including stimulation, and fourth, tranquilization—rest. 8. We should not ignore the psychic elements and we should lead the patient in

the direction of his best good. We should study disease not less, but man more.

67. **Division of the Fee.**—Gillespie reviews the question of remuneration to the physician and consultant, especially the surgeon, and suggests the following propositions: "1. That division of the fee is just to the physician, surgeon and patient, when a surgeon is called to operate and is assisted by the physician in preparation, operation and after-treatment. 2. That cases referred to a specialist for treatment or operation, without the assistance of the physician, belong to the specialist. No commission should be paid or received, hence no division of the fee. 3. That cases referred from the country to specialists in the city belong to the operator, as he assumes all responsibility of preparation, operation and after-treatment, and no fee or commision should be paid. 4. That a specialist, visiting the country for the purpose of operating only, should divide the fee with the attending physician who has charge of the case or for whom he operates. 5. That the general practitioner in the city should conduct financial matters, collect the bill and pay the surgeon what is agreed upon between them; and that with this arrangement the patient has nothing to do. 6. That a commision paid to the layman or commission as such paid to any one is wrong, unjust and unethical. 7. That the question of the division of the fee or the payment of commission should, if possible, be settled; that it is of necessity a condition difficult to reach by expedients available to the profession. 8. That the objects sought for are satisfaction, not disappointment for the patient, and a profitable visitation for the general practitioner and specialist, both present and prospective."

68. **Ophthalmia Neonatorum.**—Blitz recapitulates his views by insisting on strict antisepsis before birth; the nurse washing the eyes of the new-born first, before the rest of the face, head and body, using a sufficiently strong disinfecting solution at once when sure or suspicious of gonorrhea in the mother; but a mild cleansing wash only when no disease exists in the vagina. The eye should be inspected daily during the first week after birth, if possible; if impossible, the nurse should be instructed to report at once any signs of inflammation. If it is a case of true ophthalmia blenorrhoica, treat it promptly. Employ absorbent cotton in cleansing the eye: never using the same piece twice. Persist in the same treatment until inflammation has disappeared and the greatest possible amount of vision restored.

72. **Pneumectomy.**—After noticing a case in which there was an abscess destroying the right lung, relieved by operation for empyema, Jacobson reports his experiments on dogs in the removal of lungs. The case suggested to him that such an operation would be possible without destroying life or causing serious injury. Seven dogs were operated upon, in six of which there was total resection of the right lung and in one the removal of the upper two lobes. Of the total resections, 3 died and 3 lived; in none of the cases was the death directly due to the operation. The experiments prove that the removal of the entire right lung is possible and that one lung is sufficient to carry on life in comfort. The dangers of operation are two, pneumothorax and secondary hemorrhage. The best method of combating the former seems to be by the use of the Fels-O'Dwyer apparatus for artificial respiration during the operation. The complication of secondary hemorrhage presents difficulties which are not so serious and the author thinks that the use of the angiotribe as suggested by Murphy would be of decided advantage.

76. **Gastric Ulcer.**—The operative procedures in cases of gastric ulcer are treated of by Howitt. He first notices the operations for ulcerative stenosis of the pylorus for which pyloroplasty should be preferred, the part being as well as possible brought into view, the peritoneal cavity guarded with sterile gauze, and the ulcer removed by elliptical incision running in the long diameter of the parts, the length depending on the amount of contraction. It is then sutured in such a manner that when closed the line of union is at right angles to the original incision. In a large proportion of cases, however, this ideal operation is not possible and gastro-enterostomy is desirable. Two practical points are specially insisted upon: 1. To make sure that the proximal arm of the jejunum is sufficiently long to prevent tension in any possible movement of the stomach. 2. To anchor same arm to stomach wall with sutures just above and an inch or more to the right of point of anastomosis. This last does away with the spur or acute angle of the bowel, and prevents untoward events which frequently prove detrimental after gastro-enterostomy. In hour-glass contraction of the stomach, several methods have been suggested; some prefer gastro-anastomosis. Gastro-enterostomy is the only safe course when the hour-glass contraction is near the pyloric orifice and complicated by adhesions and inflammatory thickening of the parts. In perforating ulcer he thinks that as soon as we are satisfied it has taken place, it is good practice to give morphin hypodermically. It relieves suffering, mitigates shock and lessens the amount of anesthesia. It is good practice to eviscerate the bowels as soon as the incision is completed and protect them with sterile gauze, kept warm and moist by irrigation. This gives us ample room for thorough inspection. When the trouble is in the posterior wall near the esophageal opening, it may be impossible to excise the affected spot, in which case it may be inverted and closed by layers of sutures. The abdomen should be thoroughly flushed, care being taken with each flank, the pelvic cavity, and lesser peritoneum. On replacing the bowels it is good practice to spread the omentum carefully over and fix it below with sutures to prevent the coil becoming adherent to the line of incision. Care should be taken after suturing, to dress with dry sterile material and seal so as to prevent infection by discharge through the drainage tubes. The author advocates this practice of evisceration and temporary enterotomies to let out the gas accumulations, because it reduces shock, makes work easy, relieves bowel distention, permits the escape of germ-laden material and renders later vomiting and paralysis much less probable. The after-treatment consists of the external application of heat, strychnin hypodermically, normal saline solution by the rectum or subcutaneously, and nutritive enemata. No food is given by the mouth for four or five days.

80.—See abstract in THE JOURNAL, ¶24, p. 534.

85. **Mastoiditis.**—The question of when to operate in mastoiditis is discussed by Phillips, who thinks that when symptoms of mastoid suppuration become apparent, we are face to face with the necessity of decision on this point. The very early symptoms may be, and sometimes are, relieved by other measures than external operation, such as free incision of the drum membrane, which will frequently relieve all indications of mastoid involvement. The whole theory of relief is based on the importance of free drainage and further involvement of the mastoid cells is checked by this in some cases, together with local blood-letting, the ice coil and poultices. During the early stages of middle ear suppuration, and even after mastoid symptoms appear, irrigation with hot sterile water is good treatment, but the tendency is to carry all these measures too far. He does not use the ice coil longer than twenty-four or thirty-six hours and poulticing would be almost as bad. The external operation should be performed when permanent remission of symptoms has not been obtained by complete drainage through treatment or application of ice coil or local blood-letting, when there should be absolutely no delay. Most hospital cases reach this point before they are seen and the utility of the mild measures is past. By still further delay complications may arise that make the operation more extensive and may even endanger life. In chronic otorrhea external operation may be required to overcome suppurative processes. This is especially so in cases with chronic otorrheic discharge and attempts should be made to cure all these cases permanently.

FOREIGN.

British Medical Journal, August 17.

Enteric Fever: Its Natural History, Modes of Dissemination and Prophylaxis. A. C. HOUSTON.—In opening the discussion Houston remarks that he was struck by three things: 1. The inability of medical science to stamp out a disease, which is still classed as preventable. 2. The failure in this direction in South Africa. 3. The notable discoveries that have been made in connection with its bacteriology in the last few years. He considers the agglutinative phenomenon as one of the most remarkable bacteriologic discoveries, though he points out its exceptions. He gives a tabulated statement of the points of differentiation between bacillus coli and bacillus typhosus. Nevertheless, it cannot be said that we have yet been able to isolate the bacillus typhosus from sewage and water supply. He asks whether there may not be some direct race of coli-like microbes having specialized properties and infectious qualities, but to consider them an agent in the propagation of the disease seems to him unsupported by present evidence. The water-borne nature of typhoid is an established fact, as is also the action of milk. He calls attention to the recent discoveries in regard to the danger of shellfish taken from sewage-polluted water. The question of soil in relation to typhoid fever is one requiring much caution, though he mentions that it is well to preserve an open mind on the question. The action of flood water, sewer gas, ground air, and ground water are also noted, and sewage, as it is a dangerous source of pollution. We must see that our water supplies are free from the bacilli of the colon group. The vitality of the typhoid germ in water is a matter in regard to which there is still much difference of opinion, but that some continue to exist for a long time seems to be indicated by Klein's results. The danger of dust is noted and also the fact of the bacillus typhosus escaping destruction under modern methods of sewage treatment, in which the author's own conclusions are somewhat different from those of the majority. He thinks it would be wise to regard the effluents from bacterial beds as still unsafe. Other points mentioned by Houston are typhoid bacilluria, and the action of urotropin on it, and recent evidences of infection through fried fish and laundry machinery. He mentions protective inoculation with Wright's vaccin, which he believes may be of use. The Widal reaction in relation to early diagnosis is too little employed by the profession. He then considered the sterilization of drinking water and filtration, and, as regards this last, believes that the sand filter only lessens the danger, and that small filters, with the exception of the Pasteur-Chamberland and, to a less degree, the Berkefeld, are only to be relied upon. The general measures which should be followed to-day are: To protect the water-supply and food from contamination; to be sure that drains and sewers are in good order, and to disinfect the stools and urine of enteric patients. Recent discoveries have shown us how manifold are the channels of infection, and how prolonged and serious the capacity of enteric fever patients to disseminate the disease may be. Recognition of the dangerous condition known as typhoid bacilluria and the value of urotropin as a remedy have a most important influence in the future in the control of the spread of the disease.

Vital Statistics of Enteric Fever. F. A. Dixey.—The summary of Dixey's article is given as follows: "1. The death rate from enteric fever in London is a fluctuating one, but has on the whole materially diminished, the most marked descent having occurred about sixteen years ago. 2. The seasonal relations of enteric fever remain fairly constant from year to year, but there seems to be a tendency, at least in years of low general prevalence, towards a progressive flattening of the autumnal maximum. 3. A comparison between London and New York in respect of their climate and enteric death rate, indicates that some meteorological conditions, especially perhaps temperature, are factors in the activity of the enteric infection. The relation, however, is not of such a kind as to make itself apparent from year to year in one given locality. 4. It is probable that the diminution in the death rate of enteric fever is really somewhat greater than it appears to be, from the inclusion in former times of enteric cases under other heads, notably typhus and simple continued fever. This source of error, however, was never very important, and is now practically non-existent. 5. The case-mortality of enteric fever is almost stationary, and seems likely for the present to remain so."

Neutral Red in the Routine Bacteriological Examination of Water. William G. Savage.—This author finds neutral red a very valuable agent for the differentiation of the bacillus coli and gives the results of a number of experiments made by him as showing this fact: "1. That a positive reaction obtained as described, while not certainly diagnostic of bacillus coli, yet in the vast majority of cases pointed to the presence of that organism. 2. That a negative reaction renders the presence of bacillus coli highly improbable. 3. That the test is very readily applied, and with reasonable care, fallacies in its employment can be avoided. 4. That it is a test which is of great value in the routine examination of water."

The Fallacy of the Permanganate Disinfection of Wells (Hankin's Method). M. L. Dhingra.—The author thinks Hankin's method of permanganate disinfection is of but little value. Potassium permanganate can only act under certain conditions, and even then is not continuous in action. It must first expend itself in oxidizing nitrites and organic matter before attacking the organisms, which are so resistant that it is applicable only in concentrated 5 per cent. solutions. For practical purposes it can be regarded only as a deodorant. The method is impossible in its practical application. The use of a couple of ounces of potassium permanganate does not bring about any profound changes in the chemical or biological constituents of well water.

The Lancet, August 17.

The Diagnosis and Surgical Treatment of Carcinomatous Stricture of the Colon. W. J. Walsham.—According to Walsham, the common form of carcinoma of the colon, viz., columnar-celled—is one of comparative benignity and may, for a considerable time, remain a purely local disease, the patient enjoying several years of comparative comfort before secondary deposits in the glands and internal viscera terminate his life. When, as is often the case, symptoms of acute obstruction have come on before surgical aid is sought, it is better to operate in two stages: 1. To do a primary colotomy with or without the withdrawal of the carcinoma on to the abdominal parietes. 2. When the patient has thoroughly recovered from the deleterious effects of obstruction, to remove the carcinomatous portion of the bowel and unite the ends above and below. There may be even almost complete stenosis and still no dissemination, but when dissemination at length occurs, with such symptoms as uneasiness, distension, eructations, and a series of conditions often attributed to indigestion, attacks of pain or spasm attributed to the colon independent of the time of taking food, liquid stools without any formed motions, constant progressive loss of weight and a constant desire to defecate, it is well to make an exploratory incision. If acute obstruction has supervened the safest course is to open the colon above the growth and to deal with the latter after the acute stage has subsided.

Annales de Dermatologie (Paris), July.

Treatment of Rodent Ulcer. Carle.—The slowly developing ulceration, with no propagation to the ganglia and no effect on the general health, is frequently misunderstood, as no one thinks of the possibility of rodent ulcer. Carle describes three cases of six, eight and eighteen years' duration respectively—each erroneously diagnosed and treated as lupus or syphilis. Complete extirpation is indicated when possible, but if the ulceration has extensively invaded the face, as was the case in two of his patients, curetting and cauterization will cure after the possible failure of skin grafting and cauterization with potassium chlorate. With or without anesthesia or cocain, the entire ulcerating surface is thoroughly curetted. Hemorrhage was considerable in one case but was arrested by tamponing. A gauze pad was then applied, impregnated with a mixture of 1 gm. arsenious acid in 75 gm. each of alcohol and water. The gauze was removed the fourth or fifth day and the area painted with a stronger mixture, increasing the strength to one part of the acid in forty parts each of water and alcohol, and leaving the affected part open to the air. No permanent dressings were applied and the eye was protected merely by a bandage. In two and one-half months the ulcer was covered with a good quality of epidermis and only a slight redness now marks the spot.

Kerosene Frictions for Alopecia Areata. Hallopeau.—A young woman who had had rebellious alopecia for more than a year, was practically cured by washing the head twice a day with soap and then rubbing kerosene vigorously into the bald patches. They soon became covered with soft hairs which by the end of eight months, had almost all been transformed into adult hairs.

Compression as a Means of Treating Ichthyosis. Hallopeau.—In a severe case of congenital ichthyosis described, the skin under the garters worn by the patient was normal. This suggested that compression might have some influence on the affection, and a bandage was applied to one arm to test this assumption. In a few days all the concretions under the bandage had disappeared. This fact suggests a new line of treatment for ichthyosis, and also indicates that the interference with the nutritional processes in this affection is not so severe as hitherto supposed.

Annales de la Soc. Med.-Chir. de Liege, June.

Practical Diagnosis by Microbian Antibodies. E. Malvoz.—The presence of pathogenic microbes does not necessarily indicate that the bearer is infected by them. But if the organic fluids contain the specific antibodies—showing that they must have been elaborated as a means of defense against the pathogenic action of the microbes in question—there is no longer any doubt that the organism has been invaded by these microbes. The properties of the humors—the consequences of the reaction of the organism in defense and in immunization—testify much more certainly to the existence of infection than the discovery of the pathogenic microbes on the mucous membranes. This defensive reaction is revealed by the elaboration in certain cells of the organism of special substances whose nature is still a mystery, but which we term antibodies. These pass from the cells into the organic fluids or at least into the blood serum. They induce the specific agglutination, precipitation, bacteriolysis or globulysis, and hence have been called by various writers according to the special process under consideration, agglutinins, precipitins, antidiastases, antitoxins, etc. Their action, it has been proved, depends on the combination of the alexin, which is found normally in the blood, and the specific between-body or *sensibilisatrice.* The presence of these antibodies in the serum is the best possible evidence that the organism has been invaded by the specific microbe, that a reaction has occurred, in short, that it is having or has had the disease. The alexin does not seem to differ in various species, but the *sensibilisatrice* is specific for each. The new method of diagnosis is based on the corpuscle-destroying property of the alexin in serum rendered globulytic beforehand. If a serum containing a specific *sensibilisatrice* is added to an emulsion of the microbes in question, the *sensibilisatrice* clings to the microbes and filters out of the fluid with them. The microbes thus *sensibilized,* acquire an affinity for alexin, and when added to normal serum, take up or bind the alexin in it in the same way. But if the microbes have not been previously submitted to the action of a *sensibilisatrice,* the alexin is unaffected by them. Consequently, for diagnostic purposes, all that is necessary is to determine whether the alexin in a given specimen of serum is free or whether it has been bound by the microbes. This is easily determined by adding to the specimen of serum some red corpuscles in blood previously *sensibilized* by an antibody. If the reds are destroyed, this hemolysis or globulysis, as it is called, is the proof that the alexin is intact, and hence, it demonstrates the absence of the specific *sensibilisatrice* in the serum. Malvoz finds the serum of rabbits, rendered hemolytic for hens' blood, most convenient for this new method of diagnosis. Defibrinated hens' blood is injected into the rabbits several times in succession. The serum of the rabbits then acquires the property of destroying the red corpuscles in hens' blood by the action of the alexin contained in it. The process is visible to the naked eye from the diffusion of the red color through the fluid as the reds are destroyed. The alexin is destroyed by a temperature of 55 C., consequently the rabbit serum lost its hemolytic property if heated to this point, but the *sensibilisatrice* is not affected by the heat. Tests with animals inoculated with blastomycetes, established the presence of a *sensibilisatrice* in their blood every time, but tests of persons with cancer failed to disclose any *sensibilisatrice* in their case. This is an argument against the causal relation of the blastomycetes to malignant disease. The serum from the rabbits inoculated with the blastomycetes was heated to 55 C. and added to an emulsion of the microbes after mixing with a little normal rabbit serum, containing the normal amount of alexin. The microbes—blastomycetes in this case—absorb the alexin in case they have been previously *sensibilized* by the specific antibody, and when hens' blood is added to the mixture, the red corpuscles remain intact, and no change ensues in the shape of the corpuscles or the color of the fluid. On the other hand, in case there is no *sensibilisatrice* for blastomycetes in the serum, the corpuscles are speedily destroyed. Lambotte by tests on these principles has demonstrated the identity of the bacillus alvei with the bacillus mesentericus, which he has long maintained, but which he was unable to prove until provided with this new method of diagnosing the specific reaction of the organism to a given pathogenic agent. [See Editorial in The Journal of June 29, p. 1832.]

Bulletin Medical (Paris), July 10.

Chyliform Effusion in the Pleura. F. Barjon.—A chyliform effusion usually commences insidiously, with little or no fever, and the patient is generally lost sight of before the cure is complete. Only 13 cases of chyliform effusion were found in a recent collection of 49 cases of milky effusion in the thorax. It is characterized by the long latency, the chronic course and the large amount of fluid, rich in fat, with no glucose. A personal case is described. As the patient reacted positively to the tuberculin test and as animals inoculated with the fluid exhibited evidences of tuberculosis, Barjon is convinced that the chyliform effusion is the manifestation of a chronic infection of the pleura, determined by an attenuated bacillary infection—by the tubercle bacillus in the case related.

Nord Medical (Lille), August 1.

Cold Rectal Injections in Typhoid Fever. Lemoine.—When for any reason it is impossible to apply cold baths in the treatment of typhoid fever, Lemoine finds that cold rectal injections are an efficient substitute. The water should be boiled and cooled to 18 or 20 C. and should be injected every two or three hours, the receptacle for the water being not more than 50 cm. above the plane of the bed. The canula should be inserted for 20 cm. and about 2 liters of water injected, very slowly, interrupting the flow from time to time so as not to distend the intestine too much. In the 32 cases in which this technique was followed, the temperature was reduced more rapidly than with the baths, but the effect was less durable. The temperature drops to the lowest point in twenty to thirty minutes after the injection. but in another half hour rises to what it was before the injection. Notwithstanding the insufficiency of the effect, the cold injections, as a rule, seem to ensure a lower temperature on the whole than the baths. The oscillations are less pronounced and the disease seems to run a more regular course. This fact he explains by the disinfectant action of the fluid as it washes out the intestine. He therefore recommends these injections, as far preferable to cold packs or applications which fatigue without really benefiting the patient. Delirium is exceptional in patients thus treated.

Presse Medicale (Paris), July 10.

Experimental Research on Smallpox. H. Roger and E. Weill.—Rabbits inoculated with pus from a smallpox patient resisted the disease or survived much longer than the control animals, when they were fed on exceptionally nourishing food. Other animals fed with ordinary food rapidly succumbed to the disease. Applying these results to man, smallpox patients were given eggs, soups, etc., even during the febrile period, and the results have surpassed anticipations. Experience has also shown that cases in which the patients refused this abundant nourishment, from lack of appetite or difficulty in swallowing, prove unusually severe with a grave prognosis. The smallpox produced in rabbits resembles more the disease as it appears in the new-born than in adults. In Roger's experience infants born to mothers in the course of smallpox, almost invariably die. Some die with a slow septicemia, hypothermia and emaciation, with no eruption. Others with these symptoms have a slight eruption characterized by small papules which dry up without suppuration. Others still may present the clinical picture of smallpox as it appears in adults.

Deutsche Med. Wochenschrift (Leipsic), August 15.

Diagnosis of Pharyngo-Esophageal Diverticulum. H. Schmilinsky.—A patient with recent pulmonary tuberculosis presented symptoms suggesting an aneurysm of the aorta, but radiography was negative. The difficulty in swallowing and the return of ingested fluids into the mouth, accompanied by mucus, indicated a diverticulum in the esophagus. Mucus was constantly rising into the mouth, especially when the patient bent forward, and pain was frequently experienced in the neck. The autopsy disclosed a typical pharyngo-esophageal diverticulum. In a similar case in a woman of 72, the symptoms had been noisy eructations, without vomiting or regurgitation of food. After a year she noticed that mucus came up into her mouth with the eructations; six months later food seemed to stick in her throat, mostly meat and bread, sometimes fluids. What she was unable to swallow returned, gurgling, into her mouth. Her chief annoyance, however, was the frequent rising of mucus into the mouth which disturbed her even in sleep. A sound introduced into the esophagus for 17 cm. encountered an obstacle. A rubber bag on the end of the sound could be inflated to the size of a pigeon's egg without discomfort, but could not be withdrawn, showing that it must be in a diverticulum with a narrow entrance. The esophagoscope confirmed the existence of a diverticulum, the entrance 14 cm. below. The Roentgen rays also showed a diverticulum very distinctly after the patient had swallowed a little bismuth. The bismuth deposits could be seen in the diverticulum and could be stirred up with a sound. As they probably caused the mouth of the sac to gape and admit air, the diverticulum itself cast a shadow on the screen.

Diagnosis of a Deep Diverticulum in the Esophagus. W. Zweig.—There are only seven cases on record of a diverticulum low down in the esophagus, but three have been observed recently at Boas' clinic. Improved diagnostic technique will probably render their discovery more frequent. Zweig introduces a tube with a funnel-shaped opening into the esophagus. It almost invariably passes into the diverticulum. A second similar tube is then introduced, and this always passes on into the stomach. The first tube is then filled with a solution of methylene blue, the amount calculated to correspond to the capacity of the diverticulum, previously determined by aspirating the contents. The tube in the stomach is then withdrawn, if the blue solution is held in an actual diverticulum, the stomach tube will show no traces of the stain, while if the disturbances have been caused by a mere dilatation of the esophagus, the stomach tube will be stained and will contain more or less of the blue fluid. Radiography after the patient has swallowed bismuth, confirms the diagnosis. In none of the three cases was there any vomiting of food from a previous day. Swallowing was painful in only one case. It was impossible to obtain any information from gastrodiaphany. Attempted inflation of the stomach with carbonic acid caused the inflation of the diverticulum alone in two cases, with intense oppression and expulsion of foam. Zweig recently had a case of dilatation of the esophagus under observation. The food ingested seemed to stop just above the stomach where it remained until the man drank water, when it all slipped at once into the stomach. This phenomenon had been noted for twenty-seven years and had never caused any other disturbance. He is now 63 years old. He was run over by a carriage and had a rib fractured in 1863. The two-tube test disclosed a moderate dilatation of the esophagus 44.5 cm. below the teeth.

Mitteilungen a. d. Grenzgebiete (Jena), vii, 3.

Thyroidism in Case of Simple Goiter. J. von Mikulicz.—The functions of the thyroid gland are not necessarily disturbed in every case of simple goiter. Such disturbances are rather the exception than the rule. In 117 cases of uncomplicated goiter, 48 showed no other symptoms or merely symptoms of compression of adjacent organs, especially the trachea. In 69 there were nervous symptoms indicating hyperfunction of the thyroid gland, with or without indications of compression. Study of these various cases shows that a moderate degree of tachycardia—112 the maximum—must be included in the symptom-complex of a goiter unaccompanied by dyspnea or alterations in the heart and not complicated by Basedow's disease. There is no exopthalmus, but nervous symptoms were noted in nearly all of the last group of 69 patients: two symptoms in 9; three in 13; four in 8; five in 2 and six in 2. In the last 2 cases the entire picture of restlessness, subjective palpitation, angina pectoris and tremor of hands and tongue, coexisted with headache and vertigo. Tremor was the most frequent symptom and headache next. The clinical picture of the simple goiter in his cases, therefore, included a moderate amount of tachycardia, certain nervous symptoms, alone or in combination, and slight suggestions of the ocular symptoms of Basedow's disease in a few instances. He calls this the syndrome of spontaneous thyroidism. Basedow's disease, therefore, can not be explained by hyperfunction of the thyroid gland alone. The goiter, however, is an important factor, whether we attribute the disease to a primary neurosis or to any other kind of autointoxication. The thyroid gland in the circulation of the subject of Basedow's disease acts like a multiplier. The goiter is not a primary, but merely one of the co-ordinated symptoms of the disease. The thyroid gland becomes hypertrophied on the basis of the same influences which induce the manifold trophic disturbances in other organs and tissues. The hypertrophy of the gland impels it to excessive function, and thus the symptoms of spontaneous thyroidism are superposed, multiplying the entire clinical picture. Removal of the thyroid gland abolishes the multiplier, and renders recovery possible, either spontaneous or assisted by the usual internal measures. The failures to cure after extirpation of the gland are due to the severity of the original affection, which maintains the syndrome in spite of the removal of the multiplier. In the cases of Basedow's disease without a goiter, the primary disturbances are so severe that the typical clinical picture is produced without the aid of the multiplier.

Relations Between Erysipelas and the Streptococcus. P. Klemm.—The streptococcus induces serous inflammation as the principal effect of its action. Its pyogenic and necrotizing properties are only secondary and are not manifested except under certain conditions. The streptococci usually find their way into the circulation through the lymphatic apparatus of the throat, especially through the tonsils. Swelling of the joints, etc., in follicular tonsillitis, scarlet fever, etc., is determined by a serous or sero-fibrinous transudation into the cavity of the joint without destruction of tissue. Complete restitution is the rule, while a staphylococcus infection destroys the tissues and forbids anatomic and functional restitution. Notwithstanding the apparent differences between a simple surface erysipelas and an intramuscular streptococcus phlegmon, both processes are absolutely alike, and the difference between them is merely the mechanical conditions of the tissues involved. Klemm therefore considers erysipelas a rapidly spreading serous lymphangitis, located either above or below the fascia, and with the streptococcus as the causal agent. He is convinced that infection occurs by contact, as he never succeeded in inducing it or in developing cultures of the streptococcus from the air. The practical benefit of his researches is that he has succeeded in banishing erysipelas from his hospital. All patients with suppurating streptococcus affections, such as otitis media, follicular tonsillitis, etc., are liable to transmit the streptococcus infection to others whose skins or throats are in a specially receptive condition. New patients are examined for streptococci and if they are discovered, the patients are put in a special streptococcus ward with separate attendants. Especial attention is paid to tuberculous fistulæ which are liable to become infected with streptococci at any moment. Every precaution is taken to reduce the chances of infection to the minimum. Dressings are cut off instead of being unwound, and are placed at once in disinfecting fluid. He is inclined to believe that an already existing streptococcus mycosis renders the body more resistant to a second infection, as not a single case of erysipelas has developed, even in the streptococcus wards since these measures have been adopted.

Functional Results After Operations on the Stomach. R. Rencki.—Seventeen cases in which operations were performed on the stomach for the cure of round ulcer or benign stenosis of the pylorus, have been followed to date. The cure has been complete and permanent in all those cases in which the chemistry of the stomach has returned to normal. All the patients have been wonderfully relieved and improved, but a few with persisting hyperchlorhydria complain of heartburn and oppression in the stomach, and a small number exhibit symptoms of a recurrence of the ulcer. The fate of a round ulcer depends on the chemistry of the stomach. As long as there is excessive secretion of HCl we can not be sure that the ulcer has healed over or that another may not recur, as in one of the cases reported. Hyperchlorhydria is the cause of the round ulcer, and it should never be neglected, for fear of this termination. In all other respects the functional results of the gastro-enterostomy have been satisfactory from every point of view.

Muenchener Med. Wochenschrift, August 13.

Diagnosis of Malignant Tumors. E. Leser.—Out of 392 patients operated on for malignant tumors in the last eleven years, 305 have been traced to date and 78 found in good health. They include 9 cases of carcinoma of the face, 16 of the breast, 29 of the alimentary canal, 3 of the testicles and 2 of the kidneys. None of the patients with carcinoma of the tongue or esophagus is still alive. The operation was performed over ten years ago in 7 cases; over six years in 25, and over three years in 29. The diagnosis of a carcinoma of the stomach or intestines is usually only presumptive, as there are no typical symptoms. The insignificant, invisible hemorrhages recently described by Boas (see The Journal, June 8, p. 1670), may prove of valuable assistance. Alternation between diarrhea and constipation is important and should suggest malignant disease in a patient between 35 and 50; and the feces should be carefully examined with the microscope. Digital examination in profound narcosis should never be neglected. In all cases an exploratory laparotomy should be done on the mere suspicion of carcinoma. When the diagnosis becomes positive, the patient is already doomed. Leser operates, therefore, at the earliest moment and does not refuse to operate even in advanced stages, as the patient's condition is rendered so much more tolerable. He adds that 14 of his 42 patients operated on for carcinoma of the rectum, are still alive, several more than seven or eight years after the operation. A number had been operated on elsewhere previously for one to three recurrences. The lymph glands in the vicinity—even those apparently sound—should be extirpated with the neoplasm and the connecting routes and connecting tissue. The cosmetic effect is less satisfactory, but the curative results are far better. He removes the entire lip and says that the entire tongue must be ablated in case of a carcinomatous growth—partial operations are insufficient. Nature compensates the absent tongue by drawing up the tissues beneath and down from the cheek until almost a new tongue results. Sharp instruments should be used as little as possible; the neoplasm should be enucleated with the fingers, aided by the closed scissors, remembering that the tendency to spread is always in the direction of least resistance. Leser ascribes his successful results to his strict enforcement of the orders that each patient must return for examination regularly, at first every eight to ten weeks, no matter how well he feels. This is the only way to forestall recurrences. He has one patient in permanent robust health after five operations for recurring carcinoma, and others after three operations. Recurrences require prompt operating and no one but the physician is able to detect their approach.

Atropin Treatment of Ileus. Gebele.—If an internal remedy is indicated in case of ileus, especially in ileus from paralysis, *morphin* is much to be preferred to atropin. In all other cases, surgical intervention is the only treatment. But in all cases of ileus benefit may be derived from lavage of the stomach and injection of several liters of oil, with, possibly, 70 to 100 gm. olive oil internally, repeated several times a day. An exploratory laparotomy is much to be preferred to the administration of atropin which masks the symptoms and allows the favorable moment for intervention to pass, as occurred in a fatal case reported.

Syphilitic Sciatica. A. Biewerth.—Mendel has recently described three cases of syphilitic sciatica and Niewerth has had occasion to treat another. All were promptly cured by mercurial treatment after the usual remedies, including potassium iodid, had demonstrated their inefficacy. Vapor baths caused violent exacerbations of the pains in one case, suggesting the existence of an acute inflammatory process.

Application of the Stomach Sound in Case of Ulcer. W. Flade.—The information that can be derived in regard to ulcer of the stomach from introduction of the stomach sound or even from artificial inflation of the stomach with air or carbonic acid, is not very important. On the other hand, the procedure is by no means so harmless as generally accepted. The danger of perforation is particularly great in case of young women, and is especially imminent when the ulcer is located in the anterior wall. Severe hemorrhage seldom results, but the injury caused by the sound may entail the imperceptible hemorrhages to which Boas has called attention. The use of the stomach sound should be absolutely rejected in case of an established ulcer, and also in many other gastric affections in which it is now currently used. The writer is a specialist for gastro-intestinal affections and speaks from a wide experience.

Therapeutische Monatshefte (Berlin), July.

Treatment of Cutaneous Affections With Cold. E. Saalfeld.—Very favorable results are reported in this communication from the application of liquefied air, ethyl chlorid or a mixture of the latter with methyl chlorid. Saalfeld asserts that the prompt improvement and the convenience of this method of treatment commend it for all chronic cutaneous affections, with much infiltration, and in which it may be anticipated that resorption will follow an acute, artificially induced inflammation.

Symptomatic Treatment of Cough. M. Saenger.—One of the best measures for relieving a cough is the inhalation of the vapors of menthol. Saenger says that an inexpensive and very effective method of inhaling is to warm a few crystals of menthol in a spoon over a candle for five to twenty seconds and then inhale the fumes, repeating as often as necessary. A simpler way, perhaps, is to pour ten to twenty drops of a 50 per cent. alcoholic solution of menthol on the palms and then hold them, like a mask, over the face. In case of excessive mucous secretions in the throat, he recommends injecting 1 or 2 gm. of a 10 to 20 per cent. solution of menthol in olive oil, directly into the throat. Violent coughing is induced which expels all the old accumulations of mucus, and enough of the menthol is retained to accomplish the purpose of an inhalation. This measure in chronic bronchitis or phthisis will arrest the cough for one to five hours after the first paroxysm is past, or even longer, if supplemented by inhaling as above described. It has a cumulative action and the intervals should gradually be lengthened. These injections have proved extremely effective in whooping cough. Hemorrhage is a contra-indication. [A writer in the *Bull. Med.* has recently suggested that the simplest method of inhaling menthol is to chew a crystal and then breathe through the mouth. Ed.]

Wiener Klin. Rundschau, August 11.

Case of Poisoning With Nitrobenzol. V. Simerka.—As *nitrobenzol* is not dissolved by water or the stomach secretions, it remains unchanged for an interval—usually about half an hour—after its ingestion. Consequently, thorough lavage of the stomach is indicated until the fluid aspirated is odorless. Alcohol and oils dissolve it and all substances containing them, such as milk, wine, etc., should be avoided. The fatal cases on record were not treated with lavage. In two of the published cases the symptoms of intoxication were apparent at once. The only constant symptoms are the odor of the breath and the cyanosis. The blood becomes brownish and the entire central nervous system is more or less affected, with various manifestations. The dose in the fatal cases was 150, 20 or 15 gm. Serious intoxication has followed ingestion of three drops and recovery has followed ingestion of as much as 30 gm.

Wiener Med. Blaetter, July 4 and 11.

Atropin in the Differentiation of Bradycardia. A. Johanessen.—Bradycardia may be caused by a direct or reflex irritation of the bulbar vagus center, or by some lesion of the automatic motor center of the heart in the myocardium. These primary causes can be readily differentiated by the subcutaneous injection of 1 mg. of atropin. In case the bradycardia is of intracardial origin, it continues unaffected by the action of the atropin. But if it is due to irritation of the vagus center, it is arrested by the atropin, as the latter paralyzes the heart-retarding apparatus—the terminals of the vagus in the heart. Several cases are described, with postmortem discovery of sclerosis of a coronary artery in the cases in which the bradycardia persisted uninfluenced by the atropin. In the case in which the bradycardia was arrested by the atropin and the pulse increased at once from 45 to 110, fresh thrombosis was found in the left middle cerebral artery with softening of a portion of the internal capsule, the optic thalamus, etc. The heart was intact.

Ztft. f. Orthopaedische Chirurgie (Stuttgart), ix, 2.

Operative Treatment of Congenital Luxation of the Hip-Joint. A. Codivilla.—In cases in which the parts offer an obstacle to the reposition of the head of the femur, Codivilla levers the latter into place by an instrument shaped like a narrow, concave spade with a hook at the tip. It is inserted under the muscles and the capsular ligament until the hook fits over the anterior inferior spine, which affords it a solid support. The handle is then pushed downward, while the lower end of the femur is swung around to meet it. The combined leverage of the spade and of the lower end of the femur forces the head in the concavity of the spade, along into its normal position. If the complete absence of the acetabulum is the cause of the luxation, he remedies this by an extra-articular operation, detaching the capsule and taking a tuck in it, with freshening of the periosteum and ilium. If an incision in the capsule is necessary, he uses an instrument similar to König's mouth-opener to tear the capsular isthmus, supplementing it with the lever above described. The head of the femur must be left covered with its capsule, which will reduce the danger of ankylosis. The hip-joint should be opened up through an incision along the anterior margin of the tensor fasciæ latæ, continued upward along the iliac crest. The tensor fasciæ latæ and a portion of the gluteus minimus and medius is then detached from the ilium.

Gazzetta degli Ospedali (Milan).

Antituberculosis Serum in 1900-1901. Maragliano.—The Journal has published from year to year Maragliano's reports of the results of treatment of tuberculous patients with his antitoxin. In the year closed in June, 130 out-patients were treated; 36 were clinically cured, including 17 with fever and destructive processes—with a cavity in 3; 58 were improved and the disease remained stationary in 31. In the remaining 5 the disease progressed. None of the advanced cases treated in the institute was cured. It is impossible for the antitoxin to cure without the assistance,—the re-enforcement of the organism. When the latter is unable to afford this assistance, the antitoxin is comparatively powerless. It is also unable to cope with the toxins from micro-organisms other than the tubercle bacillus. Maragliano has always maintained that tuberculosis is essentially a toxicosis—that the tubercle bacillus is harmful on account of the toxins it produces.

August 4.

Pathogenesis of the Disturbances From Helminthiasis. G. G. Battista.—Four cases are described showing the various disturbances to which children with helminths are liable. In one, an acute intestinal catarrh with typhoid symptoms was accompanied by a diffuse bronchitis and was followed by death in twenty-nine days. In another, the only symptom was croup. After death from suffocation, an ascaris was found in the larynx and a bunch in the esophagus. Another child suffered from frequent, sudden bronchial attacks with fever, all symptoms vanishing after expulsion of a few ascarides. In another child a pneumonia, accompanied by fever and abdominal pains, rapidly subsided after expulsion of a few ascarides. The irritating action of the parasites in the intestines had probably irritated the peripheral fibers of the vagus and induced the bronchial spasms in these and other cases, or the relaxation of the pulmonary vessels in a bronchial catarrh or actual asthma. The irritation may be in the respiratory organs or in the respiratory center. There may be at the same time an intestinal autointoxication, induced by the mechanical action of the parasites, which may influence the vasomotor center or the local ganglia, inducing the angioneurotic disturbances. These assumptions would explain the epidemics of febrile asthma described by Bellotti, and the bronchial asthma from gastrointestinal autointoxication mentioned by De Dominicis, and also the development of pneumococcus infection from pneumococci vegetating harmlessly in the lungs until their latent activity is aroused by some—possibly slight—thermic, chemical or mechanical alteration in the tissues on which they are lying. The reflex irritating action of helminths in the intestines on the innervation of the pulmonary vessels, is similar to the effect of an external trauma on the thorax or the trauma of a surgical operation, which induces vasomotor disturbances and thus prepares the soil for the development of hitherto harmless pneumococci in the lungs.

Absorption by the Large Intestine. G. Barbiana.—The large intestine has great absorbing power although less rapid than the stomach. Potassium iodid appears in the urine twenty minutes after injection into the large intestine, salol in forty-five, quinin in fifty, and chloroform and ether in sixty minutes. The influence of chloral is felt in ten minutes and apomorphin in four. The minimal fatal dose of a poison injected into the large intestine in animals kills them exactly as it does when taken by the mouth. Absorption is most rapid near the ileo-cecal valve and least rapid in the middle portion. The absorbing power can be increased by the mechanical action of water or by the chemical action of sodium sulphate. The latter stimulates the mucosa to increased function. The intestine does not absorb alimentary substances as well as it absorbs medicine. Even predigested foods are not absorbed in sufficient amounts to supply the needs of the organism except temporarily. The details of this research are given in the *Policlinico*, viii, C.

August 11.

Safe Limit in Operating on Veins. D. Taddei.—Continuing his experimental research on suturing and lateral ligature of veins, Taddei considers himself justified in proclaiming that the amount of constriction which the veins will bear depends on their distance from the heart. It is possible to reduce the caliber of a vein by one-half, without ill results, if the vein is straight and not far distant from the center of circulation. But if at a distance, and if the conditions are unfavorable, as in the case of the femoral vein for example, the lumen is liable to become obliterated by a thrombus.

Iodipin Test of Gastric Motility. Schupfer has been experimenting with the iodipin test of the motor function of the stomach in Baccelli's medical clinic. He is impressed with its simplicity, facility and the general reliability of its results. He warns that icterus is a contra-indication, even for several days after the icterus has disappeared. By combining the iodipin and the salol tests it is possible in some cases to determine from the results obtained the permeability of the pancreatic duct.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Aug. 15 to 21, 1901, inclusive:

Earl S. Bullock, contract surgeon, leave of absence granted.

William H. Corbusier, major and surgeon, U. S. A., member of a retiring board convened at Governor's Island, N. Y.

G. Parker Dillon, contract surgeon, from Jefferson Barracks, Mo., to San Francisco, Cal., en route for service in the Division of the Philippines.

Charles R. Greenleaf, colonel, asst. surgeon-general, is detailed to represent the Superior Board of Health of the Philippine Islands at the meeting of the American Public Health Association, to be held in the city of Buffalo, N. Y., Sept. 16-20, 1901.

Alva R. Hull, contract surgeon, from San Francisco, Cal., to duty at Jefferson Barracks, Mo.

Richard W. Johnson, major and surgeon, U. S. A., member of a retiring board convened at Manila, P. I.

John S. Kulp, captain and asst.-surgeon, U. S. A., member of a board convened in New York City, N. Y., Sept. 24, 1901, to examine officers for detail to duty with the Ordnance Department.

Henry Lippincott, colonel, asst. surgeon-general, member of a retiring board convened at Governor's Island, N. Y.

Walter D. McCaw, major and surgeon, U. S. A., member of a retiring board at Manila, P. I.

Frederick H. Morhart, captain and asst.-surgeon, Vols., sick leave extended.

William E. Musgrave, contract surgeon, from San Francisco, Cal., to duty at the Army and Navy General Hospital, Hot Springs, Ark.

Louis A. Thompson, contract surgeon, leave of absence granted on account of sickness.

Edwin P. Tignor, contract dental surgeon, from Baltimore, Md., to duty at Fort Riley, Kan.

Allie W. Williams, lieutenant and asst.-surgeon, U. S. A., member of a board in New York City, N. Y., to examine officers for detail to duty with the Ordnance Department.

Robert N. Winn, lieutenant and asst.-surgeon, U. S. A., member of a board at Fort Riley, Kan., to examine officers for promotion.

Charles E. Woodruff, major and surgeon, U. S. A., member of a board at Fort Riley, Kan., to examine officers for promotion.

Appointments, Promotions, Retirements, Etc.,

Of Army Medical Officers recorded in the Adjutant-General's office, between July 15 and August 15, 1901. Previous notices of this character were published in THE JOURNAL of August 10, 1901. No appointment, promotion or other change in the status of medical officers of the Regular Army was recorded during the month. In the Volunteer Army the following were reported:

Appointments.—To be surgeon, with the rank of major: Ralph S. Porter, of Illinois; Robert Burns, of New Hampshire; Captain Vernon K. Earthman, asst.-surgeon. To be asst.-surgeons, with the rank of captain: George H. Calkins, of New York; W. Turner Wooten, of Maryland; Harry R. Lemon, of Illinois; Luther S. Harvey, of Florida; Michael A. Rebert, of Pennsylvania, and Henry du R. Phelan, of California.

Honorably Discharged.—Major Franklin A. Meacham, surgeon; Major Frank A. Artand, surgeon; Captain Thomas T. Jackson, asst.-surgeon; Captain Edwin P. Hayward, asst.-surgeon; Captain Compton Wilson, asst.-surgeon; and Captain Henry H. Rutherford, asst.-surgeon.

Commissions Vacated by New Appointments.—By Major Damaso T. Laine, appointment as major and surgeon, U. S. Vols. (act of Feb. 2, 1901): by Captain Vernon K. Earthman, asst.-surgeon, by appointment as major and surgeon, U. S. Vols.

Mustered Out of Service, Porto Rico Regiment.—Captain Jose Lugo-Vina, asst.-surgeon, and Lieutenant Simon Moret, Jr., asst.-surgeon.

Navy Changes.

Changes in the Medical Corps of the Navy, for week ending Aug. 24, 1901:

Asst.-Surgeon C. R. Burr, detached from the *Monongahela*, ordered home, granted leave of one month, and resignation accepted to take effect at the expiration of that period.

Medical Director T. J. Turner, retired, died at Mackinac Island, Mich., Aug. 20, 1901.

P. A. Surgeon D. H. Morgan, detached from Norfolk Hospital and ordered to the *Monongahela*, August 26.

P. A. Surgeon D. A. Carpenter, detached from the *Franklin* and ordered to the Norfolk Hospital.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service, for the seven days ended Aug. 22, 1901.

Surgeon H. R. Carter, granted leave of absence for fourteen days from Aug. 20, 1901. Leave of absence granted by Bureau letter of August 16 revoked.

P. A. Surgeon J. O. Cobb, granted ten days' extension of leave of absence.

P. A. Surgeon J. B. Stoner, granted leave of absence for seventeen days from September 2.

P. A. Surgeon G. B. Young granted eight days' extension of leave of absence from August 22.

Asst.-Surgeon L. D. Fricks, relieved from duty in the Philippine Islands, and directed to proceed to San Francisco, Cal., and await orders.

Asst.-Surgeon M. K. Gwyn, relieved from duty at Louisville, Ky., and directed to proceed to San Francisco Quarantine and report to the medical officer in command for temporary duty; thence to proceed to Manila, P. I., and report to the chief quarantine officer for duty.

Asst.-Surgeon T. D. Berry, relieved from duty at Cienfuegos, Cuba, and directed to proceed to Louisville, Ky., and report to the medical officer in command for duty and assignment to quarters.

Asst.-Surgeon Edward Francis, relieved from duty at the Immigration Depot, New York City, and directed to proceed to Washington, D. C., and report to the director of the Hygienic Laboratory for duty.

A. A. Surgeon W. R. Hicks, granted leave of absence for ten days from August 15.

Hospital Steward M. Walerius, granted leave of absence for seven days from August 1, under paragraph 181 of the regulations.

Hospital Steward R. F. Troxler, granted leave of absence for one month from August 20.

Hospital Steward J. E. Beck, granted leave of absence for three days from August 15, under paragraph 181 of the regulations.

Hospital Steward M. H. Watters, granted leave of absence for seventeen days from September 3.

BOARD CONVENED.

Board convened to meet in Philadelphia, Pa., Aug. 21, 1901, for the physical examination of an applicant for appointment as lieutenant in the Revenue Cutter Service. Detail for the Board: Surgeon H. W. Austin, chairman; Asst.-Surgeon J. S. Boggess, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended Aug. 24, 1901:

SMALLPOX—UNITED STATES AND INSULAR.

California: San Francisco, Aug. 8-11, 2 cases.
Georgia: Pickens County, July 1-Aug. 10, 37 cases.
Illinois: Chicago, Aug. 10-17, 1 case.
Massachusetts: Boston, Aug. 10-17, 2 cases.
Nebraska: Omaha, Aug. 3-10, 1 case.
New Jersey: Jersey City, Aug. 11-18, 1 death; Newark, Aug. 10-17, 4 cases.
New York: Elmira, Aug. 3-17, 4 cases; New York, Aug. 10-17, 36 cases.
Pennsylvania: Aug. 10-17, Philadelphia, 6 cases, 1 death; Pittsburg, 2 cases.
Utah: Salt Lake City, Aug. 10-17, 4 cases.
Washington: Tacoma, Aug. 4-11, 1 case.
Philippines: Manila, June 22-July 6, 1 case.

SMALLPOX—FOREIGN.

Austria: Prague, July 27-Aug. 3, 1 case.
Belgium: Antwerp, July 27-Aug. 3, 1 death.
Colombia: Panama, Aug. 5-12, 7 cases.
France: Paris, July 27-Aug. 3, 8 deaths.
Great Britain: Glasgow, Aug. 2-9, 2 cases: Liverpool, July 27-Aug. 3, 1 case; London, July 27-Aug. 13, 1 death.
India: Bombay, July 16-23, 2 cases, 2 deaths; Calcutta, July 13-20, 6 deaths; Karachi, July 14-21, 1 case, 1 death; Madras, July 6-19, 16 deaths.
Italy: Messina, July 27-Aug. 3, 11 cases, 4 deaths.
Mexico: Mexico, Aug. 4-11, 1 case.
Russia: Moscow, July 22-27, 5 cases, 1 death; St. Petersburg, July 13-27, 3 cases.

YELLOW FEVER.

Colombia: Bocas del Toro, Aug. 6, 1 case; total cases to date, 8.
Costa Rica: Port Limon, Aug. 3-10, 4 cases, 2 deaths.
Cuba: Regla, Aug. 7, 1 case: San Antonio de los Banos, Aug. 8, 1 case.
Mexico: Vera Cruz, Aug. 3-10, 2 cases, 1 death.

CHOLERA.

India: Bombay, July 16-23, 10 deaths; Calcutta, July 13-20, 23 deaths: Madras, July 6-19, 2 deaths.
Japan: Yokohama, July 13-20, 1 case, 1 death.
Java: Batavia, June 29-July 6, 33 cases, 23 deaths.

PLAGUE—FOREIGN AND INSULAR.

Australia: Brisbane, March 1-April 30, 15 cases, 3 deaths.
India: Bombay, July 16-23, 107 deaths; Calcutta, July 16-20, 11 deaths; Karachi, July 14-21, 7 cases, 1 death.
Philippines: Cavite, July 6, 3 cases: Concepcion, July 6, 1 case; Malabon, July 6, 3 cases; Malolos, July 6, 6 cases; Manila, June 22-July 6, 43 cases, 18 deaths; Naic, July 6, 3 cases; Paranaque, July 6, 3 cases; Santa Rosa, July 6, 1 case.

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Original Articles.

THE NATURE OF THE CANCEROUS PROCESS.*

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Like a huge and frowning sphinx at the very gateway or entrance to the field of surgical pathology has stood for centuries the great problem of the nature of cancer. This has, at least until recently, remained the inscrutable mystery of ages, although, like the great sphinx at Gheizeh, it has been always a target for shafts of all kinds. Almost every theory which the ingenuity of the human race could conceive has been advanced to account for the existence of cancer, while each theory has been ardently supported until proven unsatisfactory, or often much longer. To-day, while we desire always to pay due deference to the scholars and thinkers of times past, the only hypotheses which are even worth mentioning in this connection can be characterized as the dietetic, the embryologic, the irritation, and the parasitic theories. The dietetic theory is of importance only in case we may succeed in maintaining the parasitic nature of the disease, when it may become a subsidiary question as to whether certain raw or uncooked food may furnish at least some of the parasites in question. So far as can be seen, only to this extent can the matter of diet have anything to do with the nature of cancer. How far it may come into consideration in explaining rapidity of growth, or even susceptibility to infection, is another matter, also of subsidiary importance.

The embryologic theory of Cohnheim was a vast stride in advance, in that it offered the explanation of many curious and anomalous growths, some of which are included among the dermoids and the teratomata, while others are more distinct neoplasms of benign nature; but nothing contained within the hypothesis can ever explain the peculiar behavior of cells which constitutes the essential feature of malignant growths. Cohnheim's explanation is sufficient to account for the presence of certain cells in unusual localities, but not for their peculiar behavior. The relation of irritation and trauma to cancer formation has always attracted attention, and to-day figures perhaps as prominently as it ever did in this respect. That malignant growths frequently do follow local injuries and local irritations is most certain. The same thing is exactly as true of certain of the infectious granulomata, especially of tubercular lesions, and viewed in its proper aspect we must hold that, while serious injuries provoke extensive and serious reaction, minor injuries are often followed by such incomplete reaction and such altered tissue relations as to leave points of least resistance, which in tuberculosis, as in cancer, are favorite foci for infection. Granting the ubiquitousness of the infectious agent, and a point of lessened resistance, one may easily appreciate the relation of trauma to cancer. The same is true of that constant but trifling traumatism which we term local irritation, as, for instance, from a dirty pipe or a jagged tooth. In connection with such irritation, there must always be an abrasion of surface, and this abrasion always invites infection. Nevertheless, the relation between irritation or trauma and cancer is an indirect one, and, while accounting for certain predisposition, does not account for the active disease.

The parasitic or infectious theory of cancer is the only one which satisfies the needs of both the pathologist and of the clinician. There has always been a strange apathy among the clinicians who meet so often the antemortem features of this disease, but who apparently remain so aghast at its mysteries that they have been content to leave its solution to the microscopist. The histologists, on the other hand, have their only opportunity of studying the disease in dried and hardened sections beneath the lens. The view points of these respective gentlemen have been so widely different that they have rarely, if ever, gotten together and discussed the situation on common ground. All examinations of fresh and still warm specimens and all interpretation of the phenomena during life have been neglected in this too minute division of labor. It was the realization of all this that impelled me years ago to outline the character of the investigation required, and to secure from the Legislature of the State of New York the facilities for furthering it. In a paper published years ago,[1] I insisted that the disease must be studied by the pathologist, the biologist, the chemist, the histologist, and the clinician, all working in close association, and not at long range. In the Laboratory that was founded through the appropriation of the New York State Legislature, provision was made for associating all these specialists, and the result has been that very marked advance has been made in our knowledge of the disease. The man who knows the disease solely by what he has learned from deadhouse specimens is in poor position to explain its course, whereas the man who has simply watched the disease during life may have strong views about its infectious nature, which, however, he can justify by nothing more than by analogy, but the combination of clinical observation with experimental and laboratory work is sure to solve this problem, if it be not already solved, in a way as brilliant and as helpful as did similar researches reveal the mystery of tuberculosis.

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[1] New York Medical Record.

To-day, you will with me hold this to be true, that the history of absolute failure during times past to demonstrate an intrinsic cause, combined with accurate clinical observation and constant contact with cases, with a study of the disease as it occasionally occurs in endemic form, with the arguments by analogy (upon which I shall elaborate in a moment), and with recent microscopic studies, all conspire to stamp the disease as due to an extrinsic cause, *i. e., to be parasitic in origin.* Thus far one may safely go without transgressing well-defined limits. Are we now able to go further and say that the parasites have been discovered? For myself, I do not hesitate to answer this positively in the affirmative; that is, I am firmly of this opinion, based upon work done elsewhere, and especially upon that done, to my own positive knowledge, in our own laboratory, and corroborated apparently by the independent investigations of Pfeiffer, Sawtschenko, Sjobring, Eisen, and most recently, of Max Schüler, whose new monograph just published is to me a striking, independent and beautifully satisfactory demonstration of every statement that has emanated from the Buffalo Laboratory.

The arguments that can be adduced in favor of the parasitic hypothesis can be summarized in brief space without consuming too much time. For this purpose, take first the argument by analogy, beginning with the lower forms of life. Tumors in trees and plants are well known to vegetable pathologists and botanists. They occur so often as to escape notice. They vary in size from the most trifling gall to those large woody masses known as *xylomata*, which bring about the eventual destruction of the tree. They are frequently spoken of as tree cancers. These are due almost invariably to a species of infection. In the case of the so-called galls, the infecting agent or parasite is some minute insect which disturbs cell growth and produces cell proliferation. In the oak genus alone, for instance, there are known over eighty varieties of nut galls produced in this way. In other instances the first injury is traumatism, or its equivalent, such as is produced by the freezing of water contained within the grooves of the bark and the consequent splitting open of this protective covering, with its possibility for infection of the growing wood beneath. Through this laceration infectious agents enter from without and produce similar results. When carried to the extreme, the nutrition of the limb, or of the entire trunk, may be so far disturbed as to determine the death of the whole, or a part, of the tree. Were parasitic agents entirely excluded there would be no such thing as cancer of trees. Could they be excluded, every laceration of bark would heal, as does any protected wound in animal forms, and the result would be protection from irritation and normal repair. The more one studies tumor formation in the vegetable kingdom, the more striking will this analogy become.

Comparative pathology will furnish many other arguments. Tumors are common in the lower animal forms and would be found much more so if our observations were more minute and exact. Ten years ago L. Pfieffer described, with extreme care and minute illustration, various forms of tumors occurring in many of the insects and invertebrate animals, all of which were produced by protozoa. The higher we go in the animal scale, the more closely do these tumors resemble those of human beings, until histological characteristics are almost exactly similar. One can not avoid the conclusion that tumors in animals and man are due to the same general causes. If, then, their existence in animals can be proven to be of parasitic origin, it strengthens the conclusions in favor of a similar origin for such lesions in man.

One of the strongest of all arguments, and one which is really irrefutable, is that which we may get from the study of well-known infections which produce tumor formations. Take, for instance, the so-called infectious *granulomata*. *The essential differences between these and cancers are not their histologic structure, but the fact that we know their minute causes.* These tumors which used to be included with malignant tumors have been put in a class by themselves, and their embryologic and every other characteristic taken away from them for the purpose of classification, simply because their causes are now well known; and modern writers have drawn very sharp lines between these tumors about which they have learned much and cancers about which they know but little. And yet these infectious granulomata *are in many instances just as fatal as are the true cancers*, and are amenable to the same methods of treatment and permit of the same general management; *i. e.*, they are distinctly surgical lesions.

Take again the matter of metastasis. There is no known infectious disease characterized by metastasis, from the most acute of the septic or pyemic type to the slowest manifestations of tuberculosis, in which we do not regard metastatic lesions as one of the principal evidences in favor of their infectiousness. Why pathologists have been so loth to see in similar manifestations of cancer a like evidence of its own infectiousness I have never been able to understand. If it means anything in one case it certainly has exactly the same meaning in the other, and yet men have been blind to it for centuries.

Take again the matter of the local infectivity of cancerous lesions. There is the case recently reported of a woman who had an extensive epitheliomatous ulcer on the side, following a large burn. As a result of the *cicatrix, her arm was bound down to her side* and a cancerous ulcer appeared also on the inner side of her arm. Such a case as this means local contact infection, and is more weighty as evidence than one hundred failures to reproduce the disease by implantation. The numerous repeated and now well-known instances in which cancerous infection has followed the track of such instruments as the trocar, for example, afford other evidences whose value is undeniable. Aside from anything that the microscope may show, *a few cases of this kind will have more value than all the failures of all the experimenters of the past century.*

Next to the microscopic appearances of these growths, we have had almost numberless hypotheses advanced to account for the well-known fact that in and between the cells of cancerous growths are seen peculiar forms or particles which have been regarded by some as parasites, by others as products of cell degeneration, and by others yet as pure artefacts. It has been hard for observers to prove that they are cell degenerations and there are wide differences of opinion between those who hold to this view, as well as among those who regard them as parasites. Certain it is that no such appearances are noticed in healthy tissues or in the infectious granulomata or in the truly benign tumors. They must be either cell degenerations or parasites. No one has even been able to reproduce such degenerations under other circumstances, nor are they known or scarcely even named. On the other hand, exactly similar appearances have been produced in large numbers after inoculation or experimentation. In our Buffalo Laboratory, we could show thousands of slides illustrating these familiar appearances. They are inimitable except after the introduction of cancerous material. Thus only they are reproduced.

It is true that observers have differed widely regarding their parasitic nature. Some have regarded them as low animal forms, some as low vegetable forms. Their exact nature is of secondary importance if their parasitic rôle can only be established. The first thing to prove is that cancer is of parasitic origin. Can this be done? It has been done, for instance, in the case of malaria where the parasites are seen inside as well as outside of the blood corpuscles, and, although we as yet know little, if anything, about their biologic characteristics, we nevertheless accept them as parasites. Exactly similar appearances can be noted in and around the cells of rapidly growing cancers, and especially in parts where growth is most recent and rapid. Moreover, if scrapings be taken from a cancer while still fresh and warm, there may be observed under the lens unmistakable ameboid movements of many of these bodies which, when stained in sections, are seen in locations mentioned above.

It is perhaps more or less negative evidence and yet it is perfectly proper to say that in no other way or on no other hypothesis can the peculiar appearances noted in cancer be accounted for. There is simply no other explanation which is at all satisfactory, or can be regarded as tenable.

This is not a question of bacteria. All the investigations made by bacteriologists have failed, and there is no thought now that bacteria are the cause of cancer, their presence being occasionally accidental, but nothing more. Bacteria are by no means the only possible parasites as the history of malaria has proven. It is now a question of organisms about which as yet we know very little; as little, in fact, as the profession in general knew of bacteria when Cohn first began studying them. We turn then from bacteria to some other form of parasitic life as the necessary explanation of known phenomena. Herein lies our greatest difficulty. We are as yet almost in total ignorance of these lowly forms of life and their biologic peculiarities. We do not even know that Koch's laws for the determination of the infectious nature of a given disease are valid here for these forms, since they may not fully apply to such varied conditions. Nevertheless, we may still hold to them until they are proven invalid.

For that matter, we have almost complied with these canons in our Buffalo investigations. In almost every instance, practically in every instance when conditions have been favorable, we have found organisms in cancer cases; and in practically every instance by the introduction of cultures made from these organisms we have produced fatal results in animals, although we can not truthfully say that in every instance we have produced distinct carcinomata. We do not yet know that this can be done in animals by the forms which produce it in man. We know that syphilis and various other diseases are not communicable to animals, and in the beginning of this investigation we must not be too exacting until certain other conditions are also complied with. Where we have so far failed in complying with Koch's canons lies especially in this direction, that we are unable yet to say that wherever we find the organism we find the disease. We do not yet know the cancer organism well enough to be able to identify it outside the human body, and, therefore, while this requirement has not yet been complied with, neither has it been constantly violated.

I have often heard it adduced as an argument against the parasitic theory that the duration of cancer is altogether too long to permit its recognition as an infectious disease. Such statements as these have nothing to justify them. I may be pardoned for calling attention to this fact which I have stated before, because of its importance in this connection. Infections follow no known limit nor time law. There are some which are exceedingly acute, like cholera, bubonic plague, etc.; they kill in a few hours. There are others which run their course in a few days, like pneumonia, tetanus, diphtheria, etc. Still others extend over a period of a few weeks, like typhoid fever and glanders. The time in yet others is only measured by months. This is true of actinomycosis and of tuberculosis, whereas some instances of the latter disease and syphilis extend over years. No matter how long their course may be, we do not decline to see evidences of infection therein, and so the argument against the infectious nature of cancer because it lasts sometimes so long, must fail. Cancer certainly is often as rapid as tuberculosis, even of the acute miliary form, and is usually more rapid than are syphilis or leprosy.

Leaving now the subject of minute agents, let us look at the matter from the purely clinical standpoint. What surgeon of experience can regard the various manifestations of cancer in any other light than as expressions of a slow infectious process? Take, for instance, the case of melanotic sarcoma of the leg. As he sees the gradual transmission of the disease up the limb, and becomes still later aware of the involvement of the liver, then of the lungs, and then of various other parts of the body, how can he help say but that this is a disease which travels along the same paths and after the same fashion as does tuberculosis; or when he sees cancer *en cuirasse* following an operation for cancer of the breast, how can he avoid the conviction that he has here to deal with a slowly creeping local infection which is gradually extending and traveling as only an infection can travel? It was the clinical features of this disease that impressed me with positive convictions as to its infectious character long before I attempted to judge of the same from mere microscopic study.

But, some one may ask, what about the failure of numerous experimenters to reproduce the disease by inoculation, or by implantation? I grant quite readily that until very recent times there has been almost complete disappointment in efforts in this direction. The disappointment, however, has not been so comprehensive as in the case of syphilis, since *every* effort in this direction has failed, and yet we do not deny the infectiousness of syphilis on that account. Because of the paucity of successes in this experimental work there attaches a certain suspicion or uncertainty to every alleged successful experiment. For me, however, as remarked above, one instance of cancer following the use of an instrument, along the track which it has made, is of very great value, far greater indeed than, on the other hand, would attach to one hundred failures in deliberate implantation. Failure does not prove that success may not be finally attained, whereas one positive success is indisputable. Surely clinical observation has amply established the possibility of infection with cancer. Once that be granted, the principal contention is obtained. Failures in times past have been largely due to our ignorance regarding the biology of these minute organisms, and the conditions which favor their life or death. In our laboratory work, for instance, in Buffalo, it has been discovered that they grow best in an exceedingly weak solution, and that ordinary bacteriologic methods and culture media are absolutely inadequate. We have had best results in culture experiments by the use of an expedient suggested by Drs. Gaylord and Clewes in the use of collodion sacs. A little capsule is made of collodion; this is filled with cultures or with fresh fluids; it is sealed with collodion, then dropped into the peritoneal cavity of an animal. The organisms can not escape through the collodion, but there is sufficient osmosis of the living fluids surrounding the sac to permit them to grow, under natural conditions, and they thus undoubtedly grow in the living animal without possibility of escape. Under these circumstances, their virulence is very much enhanced, and it is found that after removal of this sac from the first animal and inoculation of its contents into a second animal, they will produce a very rapid hematogenous infection, with nodular formations in various parts of the body, corresponding exactly to acute miliary carcinosis, the nodules thus produced having often the minute character of adenocarcinoma.

It certainly is not too strong a statement, then, if I claim that in the Buffalo Laboratory Dr. Gaylord and our staff have absolutely produced adenocarcinoma by inoculation in a number of animals, and that this can now be produced in such a way as to afford unmistakable evidence of the infectivity of the disease.

When asked for a minute description of these organisms, it can scarcely yet be given. It must be enough for the present to say that they appear to belong to the protozoa, or possibly, as Schüler has hinted, to some still lower and less known animal form. They can be seen to undergo ameboid movement upon the warm stage, and careful study will reveal numerous changes which they undergo somewhat slowly, by which very positive and somewhat remarkable alterations in size, shape and general appearance are brought about. This would appear to take them out of the realm of the vegetable kingdom, and put them in that of the animal kingdom, and for the present it is enough to call them protozoa. Minute description or detailed statements can hardly be made yet, since they have to be most carefully studied, and, in fact, the whole matter of the biology of these lowly forms of animal life has to be gone over again before one talks too much about them.

These organisms, however, can be, and have been cultivated and successfully inoculated. In ordinary media they grow best in extremely weak solutions. The most successful way that has yet been devised is to deposit them in collodion sacs, as already described, in the living animal. They stand desiccation just as does vaccine lymph, and Gaylord has made some very successful experiments with lymph nodes kept dry for weeks, then rubbed up with sterilized water, and injected.

There seems to be the most absolute resemblance between results obtained in the Buffalo Laboratory and those just published by Max Schüler. There is scarcely a statement which he makes which is not corroborated by our own experiments, whereas almost everything that we have written or found is corroborated by independent statements of his own. The conditions which he portrays in his illustrations and plates are identical with those which can be seen in our forthcoming Annual Report. It seems to me that the statements of Schüler take away almost the last element of doubt which can remain as to the propriety of conclusions regarding the parasitic nature of cancer.

Of course, it is yet too soon to formulate any conclusions regarding its treatment or therapy. For the present, at least, cancer must remain, as it always has been, a surgical disease. I believe this general statement can be made, that if cancer can be recognized early, in accessible parts of the body, and be removed thoroughly, it can be absolutely cured. Unfortunately, early recognition is rare, and thorough removal too infrequent. Consequently, we have the present hideous picture of the disease displayed before the profession. For cancer in inaccessible parts of the body, diagnosis must necessarily be late, and operative treatment can benefit little, if at all. If, however, we can establish a parasitic cause and cultivate a sufficient acquaintance with the organisms at fault, it is not too much to hope that some agent, be it vegetable or mineral drug, or animal antitoxin, may yet be discovered by which the ravages of the disease may be checked or prevented. Drugs are known which destroy the protozoa that cause malaria. Let us hope that something may yet be found, and that speedily, which may have the same destructive effect upon the parasites which produce cancer, without being inimical to the animal cells of the human body. Until this can be brought about, cancer is still a surgical disease, and its discussion by this Surgical Section, or any other association of surgeons, is most proper, and in the interest of surgical science.

EARLY DIAGNOSIS IN CARCINOMA.*

CHARLES A. POWERS, M. D.
Professor of Surgery in the University of Denver; Surgeon to St. Luke's Hospital.
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So far as our present knowledge of cancer goes the nearest approach to its successful management rests on early diagnosis, prompt and thorough operative removal of the widest possible area and a careful and systematic surveillance of the patient during the rest of his life. It would be trite to dwell on the importance of the earliest possible recognition of malignant disease. All surgeons know at what a late day the great majority of cancer cases reach the specialist. The delay is due, 1, to non-perception on the part of the patient or to his fear of being given an unpleasant report, and, 2, to lack of recognition by the medical attendant or to his delay while awaiting the appearance of positive evidences.

The first must be dealt with by the systematic instruction of the laity through suitable lectures of a popular nature, magazine articles and the like. It is the duty of those members of our profession who are competent and whose standing is such as to make their utterances carry weight to thus impress on the non-medical part of the community the importance of early attention to all lumps, growths, persistent ulcers and the like, and the securing of competent advice thereon. Such publicity is not non-professional, but is most commendable. Our brethren who are interested in the matter of pulmonary tuberculosis have accomplished great good in this way; we may learn much from them.

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Further, it is hardly necessary for me to say that our physicians as well as our surgeons should appreciate far better than they do now the vital importance of early recognition in malignant disease. Some years ago I tabulated the cases of cancer applying for treatment at the New York Cancer Hospital during a certain number of months and found that of all cases so seeking admission but 9 per cent. offered any reasonable prospect of cure even after the most radical operative procedure, and that the majority of hopeless cases had been for a longer or shorter period under the care of physicians. Must we not conclude that we, as a profession, are lax in the employment of our ordinary methods of diagnosis, that we must exercise greater care, that we must make better use of the methods which we now possess?

A comparison of the carefully made histologic report on a given neoplasm with the clinical history and examination of the case will most surely instruct the physician or surgeon, fix in him diagnostic methods and lead to the lowest possible percentage of error. Permit me before enlarging upon this thought to briefly lay before you a very few of many recent suggestions:

EXAMINATION OF THE BLOOD.

Hayem[1] states that when we are unable to obtain any physical signs of cancer of the stomach there are a number of symptoms obtainable from a study of the blood. If the latter fluid exhibits no giant and nucleated forms of red corpuscles, and no leucocytosis, we *may exclude the presence of pernicious anemia*. Tentacular and pseudoparasitic forms of red corpuscle with abundant hematoblasts point to cancer. Marked anemia without an anemic murmur suggests cancer.

Hayem refers to a case in which the diagnosis was correctly made by blood examination, but for the sake of absolute proof exploratory laparotomy was performed.

On the other hand, Krokiewicz, writing on "Blood State in Cancer of the Stomach,"[2] says that while much work has been done in this field the reports are conflicting. In 1898, Henry published a statement as to the value of the blood count in latent cancer of the stomach. He attempts to distinguish between this affection and progressive pernicious anemia by the number of red corpuscles in a millimeter cube. In cancer they should not fall below 1,500,000; while in the other disease they go beneath the million mark.

As is well known, several authors diagnose latent stomach cancer when the so-called digestion leucocytosis is absent and when no chlorhydric acid can be recovered from the contents of the stomach.

There is still unanimity in the belief that the hemoglobin of the blood is invariably reduced in cancer of the stomach. But we now know—contrary to what was once taught—that in simple gastric ulcer the same permanent reduction in the amount of hemoglobin occurs (it was formerly held that in simple ulcer the red cells lost in connection with vomiting were rapidly regenerated).

The author's own experiments, however, have taught him the untrustworthiness of these signs which are connected with the state of the blood and gastric juice. Thus he found digestion leucocytosis in four cases out of seventeen, and also noted the persistence of chlorhydric acid in the stomach contents in certain instances. He is therefore inclined to minimize these diagnostic resources.

EARLY DIAGNOSIS OF CANCER OF THE STOMACH THROUGH THE PRESENCE OF THE FILIFORM BACILLUS.

Ehret, assistant to Prof. Naunyn[3] of Strasburg, publishes a communication on this subject.

The study of the flora of the stomach has been largely neglected. A large variety of micro-organisms are found in the stomach contents introduced with the food and air which have been swallowed, but we now know that while the presence of a given organism in small quantities has no necessary pathologic significance, the reverse is the case when any of these organisms are found in large amounts.

The fact that any form of germ life is able to multiply within the stomach is an argument in favor of the existence of an abnormal condition of that stomach. If the normal motility and chemism of the stomach are disturbed, stagnation, etc., would contribute powerfully to the multiplication of germs; and on the other hand, these multiplied germs may themselves possess the power of causing some form of fermentation.

When the microscope shows the constant presence of a certain micro-organism in considerable amount and upon every slide examined, we may regard the germ in question as having some sort of pathogenic significance, either as cause or effect. The multiplication of germs may represent either the cause or the result of an abnormal state of the stomach.

After these preliminary notes the author proceeds with his description of the filiform bacillus. All observers in the field of pathologic fermentations of the stomach have doubtless recognized a peculiar micro-organism in *cancerous stomachs*—a thin, very long, thread-like bacillus present to such an extent that it occupies a large portion of the field of the microscope. This germ shows true ramification. Associated with it we find yeast, sarcinæ, and cocci and bacilli of various kinds.

Boas was the first to describe this organism in his work on diseases of the stomach and he also remarked as to the frequency of its occurrence in cancer. In 1895 Schlesinger and Kaufmann succeeded in making cultures of the germ. They also ascertained that the culture was able to cause lactic acid fermentation and thereby perhaps account for the presence of this acid in cancer. The germ grows on agar with 1 per cent. glucose, forming on the second day colonies the size of a pinhead, white, dryish and almost transparent, looking under the lens like flocculi of wool.

Some confusion may arise between the filiform bacillus and the bacillus butyricus, but the culture is shorter and less thread-like. It is often difficult to obtain the filiform bacillus in pure culture. However, it is hardly necessary to obtain cultures in order to make a diagnosis.

Ehret believes that the presence of this bacillus in the stomach contents is destined to be of great service in the early diagnosis of cancer before other symptoms are present. In the first place this germ is practically absent from the healthy stomach, both to the microscope and cultures. When present it is usually in vast amounts occupying perhaps almost an entire field of the microscope.

The author found the filiform bacillus in 29 patients at the Strasburg clinic; and in 25 of these cases cancer of the stomach was shown to be present. In the other 4 a diagnosis of cancer could not be made. It is not claimed that the bacillus is pathognomonic of cancer but of extreme stasis of the stomach such as occurs in obtained. Failures in times past have been largely due to our ignorance regarding the biology of these minute organisms, and the conditions which favor their life or death. In our laboratory work, for instance, in Buffalo, it has been discovered that they grow best in an exceedingly weak solution, and that ordinary bacteriologic methods and culture media are absolutely inadequate. We have had best results in culture experiments by the use of an expedient suggested by Drs. Gaylord and Clewes in the use of collodion sacs. A little capsule is made of collodion; this is filled with cultures or with fresh fluids; it is sealed with collodion, then dropped into the peritoneal cavity of an animal. The organisms can not escape through the collodion, but there is sufficient osmosis of the living fluids surrounding the sac to permit them to grow, under natural conditions, and they thus undoubtedly grow in the living animal without possibility of escape. Under these circumstances, their virulence is very much enhanced, and it is found that after removal of this sac from the first animal and inoculation of its contents into a second animal, they will produce a very rapid hematogenous infection, with nodular formations in various parts of the body, corresponding exactly to acute miliary carcinosis, the nodules thus produced having often the minute character of adenocarcinoma.

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The first must be dealt with by the systematic instruction of the laity through suitable lectures of a popular nature, magazine articles and the like. It is the duty of those members of our profession who are competent and whose standing is such as to make their utterances carry weight to thus impress on the non-medical part of the community the importance of early attention to all lumps, growths, persistent ulcers and the like, and the securing of competent advice thereon. Such publicity is not non-professional, but is most commendable. Our brethren who are interested in the matter of pulmonary tuberculosis have accomplished great good in this way; we may learn much from them.

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* Read in the Symposium on the Surgical Aspect of Carcinoma, before the Section on Surgery and Anatomy, at the Fifty-second Annual Meeting of the American Medical Association.

Further, it is hardly necessary for me to say that our physicians as well as our surgeons should appreciate far better than they do now the vital importance of early recognition in malignant disease. Some years ago I tabulated the cases of cancer applying for treatment at the New York Cancer Hospital during a certain number of months and found that of all cases so seeking admission but 9 per cent. offered any reasonable prospect of cure even after the most radical operative procedure, and that the majority of hopeless cases had been for a longer or shorter period under the care of physicians. Must we not conclude that we, as a profession, are lax in the employment of our ordinary methods of diagnosis, that we must exercise greater care, that we must make better use of the methods which we now possess?

A comparison of the carefully made histologic report on a given neoplasm with the clinical history and examination of the case will most surely instruct the physician or surgeon, fix in him diagnostic methods and lead to the lowest possible percentage of error. Permit me before enlarging upon this thought to briefly lay before you a very few of many recent suggestions:

EXAMINATION OF THE BLOOD.

Hayem[1] states that when we are unable to obtain any physical signs of cancer of the stomach there are a number of symptoms obtainable from a study of the blood. If the latter fluid exhibits no giant and nucleated forms of red corpuscles, and no leucocytosis, we may exclude the presence of pernicious anemia. Tentacular and pseudoparasitic forms of red corpuscle with abundant hematoblasts point to cancer. Marked anemia without an anemic murmur suggests cancer.

Hayem refers to a case in which the diagnosis was correctly made by blood examination, but for the sake of absolute proof exploratory laparotomy was performed.

On the other hand, Krokiewicz, writing on "Blood State in Cancer of the Stomach,"[2] says that while much work has been done in this field the reports are conflicting. In 1898, Henry published a statement as to the value of the blood count in latent cancer of the stomach. He attempts to distinguish between this affection and progressive pernicious anemia by the number of red corpuscles in a millimeter cube. In cancer they should not fall below 1,500,000; while in the other disease they go beneath the million mark.

As is well known, several authors diagnose latent stomach cancer when the so-called digestion leucocytosis is absent and when no chlorhydric acid can be recovered from the contents of the stomach.

There is still unanimity in the belief that the hemoglobin of the blood is invariably reduced in cancer of the stomach. But we now know—contrary to what was once taught—that in simple gastric ulcer the same permanent reduction in the amount of hemoglobin occurs (it was formerly held that in simple ulcer the red cells lost in connection with vomiting were rapidly regenerated).

The author's own experiments, however, have taught him the untrustworthiness of these signs which are connected with the state of the blood and gastric juice. Thus he found digestion leucocytosis in four cases out of seventeen, and also noted the persistence of chlorhydric acid in the stomach contents in certain instances. He is therefore inclined to minimize these diagnostic resources.

EARLY DIAGNOSIS OF CANCER OF THE STOMACH THROUGH THE PRESENCE OF THE FILIFORM BACILLUS.

Ehret, assistant to Prof. Naunyn[3] of Strasburg, publishes a communication on this subject.

The study of the flora of the stomach has been largely neglected. A large variety of micro-organisms are found in the stomach contents introduced with the food and air which have been swallowed, but we now know that while the presence of a given organism in small quantities has no necessary pathologic significance, the reverse is the case when any of these organisms are found in large amounts.

The fact that any form of germ life is able to multiply within the stomach is an argument in favor of the existence of an abnormal condition of that stomach. If the normal motility and chemism of the stomach are disturbed, stagnation, etc., would contribute powerfully to the multiplication of germs; and on the other hand, these multiplied germs may themselves possess the power of causing some form of fermentation.

When the microscope shows the constant presence of a certain micro-organism in considerable amount and upon every slide examined, we may regard the germ in question as having some sort of pathogenic significance, either as cause or effect. The multiplication of germs may represent either the cause or the result of an abnormal state of the stomach.

After these preliminary notes the author proceeds with his description of the filiform bacillus. All observers in the field of pathologic fermentations of the stomach have doubtless recognized a peculiar micro-organism in cancerous stomachs—a thin, very long, thread-like bacillus present to such an extent that it occupies a large portion of the field of the microscope. This germ shows true ramification. Associated with it we find yeast, sarcinæ, and cocci and bacilli of various kinds.

Boas was the first to describe this organism in his work on diseases of the stomach and he also remarked as to the frequency of its occurrence in cancer. In 1895 Schlesinger and Kaufmann succeeded in making cultures of the germ. They also ascertained that the culture was able to cause lactic acid fermentation and thereby perhaps account for the presence of this acid in cancer. The germ grows on agar with 1 per cent. glucose, forming on the second day colonies the size of a pinhead, white, dryish and almost transparent, looking under the lens like flocculi of wool.

Some confusion may arise between the filiform bacillus and the bacillus butyricus, but the culture is shorter and less thread-like. It is often difficult to obtain the filiform bacillus in pure culture. However, it is hardly necessary to obtain cultures in order to make a diagnosis.

Ehret believes that the presence of this bacillus in the stomach contents is destined to be of great service in the early diagnosis of cancer before other symptoms are present. In the first place this germ is practically absent from the healthy stomach, both to the microscope and cultures. When present it is usually in vast amounts occupying perhaps almost an entire field of the microscope.

The author found the filiform bacillus in 29 patients at the Strasburg clinic; and in 25 of these cases cancer of the stomach was shown to be present. In the other 4 a diagnosis of cancer could not be made. It is not claimed that the bacillus is pathognomonic of cancer but of extreme stasis of the stomach such as occurs in cancer. In the non-cancerous cases there was present a condition of pyloric stenosis, or of complete atony, as shown by the fact that the sound introduced into the fasting stomach gave exit to matters ingested many hours previous.

Ehret relates a case as follows: A woman, aged 49, always robust, began to suffer from indigestion. She received intestinal antiseptics without benefit. Two weeks later the stomach sound was used after a trial breakfast. Traces of lactic acid were found (chlorhydric acid .004). The filiform bacillus was present in great quantities. The patient was examined under narcosis after inflating the stomach with CO_2, but no evidences of cancer were found.

Operation was refused, and after six months' delay a tumor was recognized, associated with failure of the general health. The patient lived a year; after death no autopsy was obtained but no doubt could be felt in regard to diagnosis.

Ehret closes by reiterating that the discovery of the filiform bacillus in large amounts in the stomach contents justifies a diagnosis of cancer.

DIAGNOSTIC REACTION FROM THE USE OF CANCER-SERUM.

The various serums which have been put forth for the treatment of cancer, and which are thought by some to exert a specific though not a curative influence upon cancer tissue, seem at times to be accompanied by an alleged reaction when injected into the body.

Thus Bra and Mongour's[4] "nectrianine," a serum prepared from the parasite of the so-called "cancer of trees," is without effect if injected into healthy animals; but in man and animals with cancer injections produce a rise of temperature of from 1 to 3 degrees in from two to four hours. Larger doses provoke chills, quick pulse, cardiac palpitation, headache and thirst. The *crisis terminates at the end of some hours* in polyuria and profound sleep. Similar reactions have been claimed for other cancer serums. The latest one to be exploited is Whaeff's bird serum, made by the Pasteur Institute at Paris. Analogy between this and tuberculin as a diagnostic agent will readily be apparent.

AUTO-INOCULATION AS AN AID IN THE EARLY DIAGNOSIS OF CANCER.

Güntz[5] proposes the inoculation of suspected cancer tissue upon the bearer, on the assumption of the infectious nature of the process. He further takes into account the possible source of infection from some other person, with long interval of latency. For example, a man with an incipient, as yet unrecognizable cancer of the lip, may *take his wife's nipple* in his mouth and thereby propagate in her a cancer of the breast. Similarly cancer of the uterus may be due to infection from a latent focus of cancer in the husband's penis. The author's views are best shown in the following case which he reports:

A robust woman, aged 33, good family history, bore a child when 21 years old. The infant lived but eight weeks. The woman and her husband lived together for ten years after this event, and then suddenly—one year ago—she began to look miserable and prematurely old. The husband observed about this time a sort of subcutaneous itching in the inguinal region, which heralded the formation of a sebaceous tumor not connected in any way with the inguinal glands. It enlarged slowly. (Five years earlier a similar wen had appeared in the frontal region near the internal angle of the eye. This had been extirpated on suspicion of being cancerous.) Examination, however, showed that it was only a wen, and since that time there has been no tendency to recurrence in the scar.

During the past four months the husband, who cohabits regularly with his wife, noted some scalding upon urination after coitus, but without any accompanying discharge. The woman's condition, already mentioned, now compelled her to take to bed. The symptoms were those of nervous break-down of an extreme type. There was some pigmentation on the face like that seen in pregnancy. This attracted attention to the uterus. The rapid emaciation and pigmentation suggested a suspicion of cancer of the uterus, but there had been no discharge nor irregularity of the menses. Finally, however, there was a sudden escape of fluid from the uterus which indicated some ulcerative process. The diagnosis of cancer soon became apparent in the opinion of several consultants. After a normal menstruation symptoms of cancer became latent again, the woman appearing quite well. The husband had connection as usual and thereby caused his wife to bleed a little, while he suffered from the scalding of the urine afterwards.

A few days later the little wen in the husband's groin started to inflame. Within eight days it resembled a bubo and was of the size of a pigeon's egg. An artificial opening gave exit to pus. The abscess healed with persistence of an indurated node.

In the meantime it was thought best to extirpate the supposedly cancerous uterus and as a matter of fact a nodule of cancer, as yet intact, was found in the portio. The patient made a good recovery.

Güntz's article ends here abruptly with the statement *that he will publish the rest of the case.* This he has never done and thus his paper is somewhat obscure, but his theory seems to be as follows: Being principally a syphilographer Güntz is simply endeavoring to apply the principle of *confrontation* to cancer. If he suspects that an individual has an incipient or latent cancer he examines the persons with whom the suspect is most intimate. He is aware, of course, that in cancer of the uterus we do not find cancer of the husband's penis, but *this may be due to the fact that the cancer germ does* not cause a lesion at the point of contact but is absorbed and deposited elsewhere. In this locality it may not cause an outspoken cancer, but may give rise to a precancerous lesion or latent cancer, such as a wart or wen, which may remain as such through life without becoming malignant.

In his case, therefore, he believes that a latent or incipient cancer of the uterus transferred some of its germs to the male urethra, where only slight local initiation was occasioned. The germs entered the circulation or lymphatics and finally caused sebaceous tumors, which frequently become cancerous. The practical lesson here would be to consider many benign lesions as essentially precancerous, especially if there is *actual cancer in some intimate. As a focus of cancer* germs such a lesion should be extirpated, for if it does no harm to the bearer the germs may be transferred to some other person with a worse result.

Cabot[6] has recently made a most interesting observation on accidental inoculation in cancer. His patient was a *man of 59 years* with a cancer high up in the anterior wall of the rectum. Removal was made by the Kraske method. The cancer was dragged down into the posterior opening and removed through it. During this manipulation the cauliflower-like, juicy growth was rubbed about in close contact with the operative wound. Two years later, the patient having been quite free in the interval, a cancerous mass histologically similar to the primary disease was removed from the posterior scar where at the original operation the cancer juice had had contact. The original site was free and separated by five or six inches of healthy tissue from the secondary one. Further, the lymphatics from the primary area lead up into the lumbar glands rather than down toward the place of recurrence. The case seems plainly one of accidental auto-inoculation.

Other observations on these and similar lines might be cited did time permit. You will, perhaps, permit me to generalize the result of a careful examination of the literature, and this is to the effect that thus far nothing seems to be proven. Individual cases are given rather than series of cases. Our diagnosis of cancer must rest on our clinical appreciation of the various symptoms, this supplemented by microscopic examination.

Disparity of opinion exists as to the employment of trial excision for microscopic examination. Many surgeons resort to it as a routine measure in doubtful cases where the tissue is accessible. Others believe any incision of cancerous tissue liable to spread the disease, while in the precancerous stage the microscope may reveal nothing and thus valuable time may be lost. In this connection no less distinguished a surgeon than Jonathan Hutchinson[7] says that he has often felt it his duty to urge that the microscope is of no value in diagnosis of the precancerous stage of cancer. He has long been a warm advocate of early operation, even before a diagnosis could be made with certainty; in a well-defined case the microscope is unnecessary, in a doubtful case it can furnish us no assistance.

In other words, cancerous growths, recognized as such from their mode of growth, etc., by the educated eye, are not cancerous histologically. A negative result from the microscope begets a false security and leads to irreparable loss of time. This opinion is not intended to reflect upon the pathologist, for the precancerous stage of cancer consists almost invariably of the histological picture of chronic inflammation.

Hutchinson has recently had four cases of cancer under his care which illustrate this uselessness of the microscope. One case was a large, characteristic epithelioma of the soft palate, almost inoperable. The patient said that eighteen months before he had had a piece excised for microscopic study. The diagnosis had been that of a non-cancerous affection. Clinically he had had a white patch on his palate for at least three years. At the time the trial excision was performed the growth might have been safely removed. In another case the patient had a similar experience. An ulcer formed at the side of the tongue and a distinguished surgeon made a diagnostic excision. The pathologist reported negatively and four months' time was thereby forfeited. Diagnosis having become certain, one-half of the tongue was excised. In a third case a patient had primary cancer of the pharynx with secondary glandular enlargement. There was the same history of diagnostic excision and negative report. The fourth case was quite similar in character to the second. Since these four cases all occurred to him within one month it may be assumed that these erroneous diagnoses are being made constantly. He has himself seen many such. He once removed an entire tongue for what he diagnosed as a broken-down and suppurating cancer. The pathologist reported "no cancer, only an abscess." A few months later the glands beneath the jaw enlarged and the subsequent history of the case confirmed the diagnosis. Upon learning of this tissue the pathologist re-examined the original specimen and found evidences of epithelioma. In a case of cancer of the palm of the hand, microscopic sections of which were examined by pathologists of England, the Continent and America, there were the greatest differences in opinion, some finding evidences of syphilis. The patient died of secondary cancer.

Halsted[8] says that tumors should never be harpooned nor should pieces ever be excised from malignant growths for diagnostic purposes. He believes that there is great danger of rapid dissemination of the growth from injecting cancer of the tongue with cocain and then snipping off a piece of the tumor with the scissors.

Halsted says that in studying the published histories of cases of malignant tumors, particularly sarcoma, he has been impressed with the great number of cases in which general dissemination of the neoplasm has seemed to follow swiftly upon exploratory incisions.

On the other hand, Kelly, Halsted's colleague, seems to resort to trial excision in all doubtful uterine cases. Cullen, in his admirable work on "Cancer of the Uterus," describes at length the simple methods of removal of uterine tissues for examination. Frozen sections, he says, give satisfactory diagnosis in fifteen minutes. It is needless to say that the greatest care must be taken to prevent confusion of specimens.

Colderini (International Congress, 1900) places great dependence upon examination of the scrapings in suspected cancer of the body of the uterus. According to him it is not necessary to find fully developed cancer tissue in order to make a diagnosis. Since cancer of the body is almost always of the type known as adenocarcinoma, it is enough to find an atypical arrangement of the glandular tissue of the mucosa. He narrates a series of cases in which the diagnosis was unhesitatingly made from such atypical arrangement, and confirmed by results of operation.

I believe that I am correct in stating that at this time the majority of experienced surgeons resort to trial excision in suitable, doubtful cases. All recognize the element of error which may be present in an individual instance, yet in a series of cases a suitable piece taken from a typical portion of the growth in the presence of an experienced pathologist and at once transferred to him will give a fairly authentic diagnostic result. My own experience in this has been favorable. While on the one hand I am not certain that no avoidable spreading of the disease has been occasioned, on the other I can not recall an extension which can be so traced and I can cite a fair number of so-called "cures" of three or more years' standing, in which a positive trial excision was promptly supplemented by wide removal of the growth. These especially in cancer of the lip, skin of the extremities and face, breast and rectum. I am inclined to believe, however, that this trial excision should be avoided when possible and that it is always best to be prepared for immediate operation; the greater the surgeon's experience the greater reliance will he be able to place on his general estimate of the individual case.

It is not difficult to say that the physician or surgeon should recognize cancer by the eye and fingers as well as by the microscope, yet his ability to do this will be in proportion to his practical experience and the careful study of his cases; we must not lose sight of the fact that in the great majority of instances early diagnosis is dependent on the family physician rather than on the skilled specialist.

As has been said, I have been personally impressed with the value of diagnostic excision. Whether or not this is wise there can be no question as to the absolute value of the most painstaking and far-reaching microscopic study of all tumor tissues after removal. This study should be made in direct connection with the history of the case and the clinical examination of the patient, and the findings should be verified by the operator himself. In the one column of his case-book may be placed his provisional clinical diagnosis; in another the pathologist's report. A comparative study of these will be productive of the greatest good. On *the one hand we have the family and life history of the* patient—the onset, duration and course of the growth; its general characteristics, resistance, "feel," tenderness, mobility or fixation; the condition of the skin or mucous membrane, of the deeper parts and glands; the blood examination if you like; in a word, all possible factors which can lead to provisional diagnosis. On the other hand lies the pathologist's report. Constant, comparative study of the two will lead to an increasing probability of accuracy in diagnosis.

I do not know that we can at this time go beyond this. In the smaller cities there is a great and increasing need of careful and capable pathologists. The accuracy of our work must be determined by them. Not long ago a well-known surgeon of Boston said to me as we were going through the superb Municipal Hospital there: "When Councilman came to this hospital he revolutionized our methods; we surgeons found that we had to live up to him and his work." We, whose lot is cast in the smaller places, must strive without ceasing for better laboratory work. Our laboratories must be consolidated, enlarged and endowed. It is not enough that the clinicians in the great centers should be in close touch with the pathologists; those in the minor cities and towns must enjoy a like privilege. Happily, facilities for the better training of pathologists are increasing rapidly.

In a recent presidential address before the Association of American Physicians, Professor Welch, the distinguished scientist, compared the opportunities enjoyed in this country by the men who desire to study the branches of scientific medicine and the opportunities open to those who wish to become proficient in clinical medicine and surgery. There are laboratories in this country, equal to any in the world, that are open to young men who have graduated and who wish to become teachers of anatomy, physiology or pathology. In these laboratories a young man must serve his apprenticeship, but Professor Welch says that his promotion is sure. May I not ask you whether (and this especially in the smaller places) we as clinicians recognize as we should the value and the importance of the work which these scientists do, and whether we sufficiently aid in making it possible for them to devote their lives to the purely scientific side of our calling? It is in this direction that advance is to be made, and it is in this direction that our duty lies; a duty seen by such wise and earnest men as Roswell Park, whose Buffalo Laboratory for the study of cancer attracts the attention and admiration of the medical world. Not all of us can create such laboratories, but we can all do something toward a better appreciation of the importance and value of the most painstaking, thorough and far-reaching laboratory investigation.

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SOME PHASES OF MALARIA.*

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On February 12, of this year, I was called to come quickly to see N. M., who the messenger said was speechless. He was a well-developed, strong negro man, 60 years of age, his family history good. He had smallpox about thirty years ago, since which time he has not been sick enough to require the services of a physician. He has never had syphilis, gonorrhea, nor rheumatism. He has lived in the Mississippi Valley eleven years, during which time he has had frequent attacks of "dumb chills." For four days prior to this illness, he had daily paroxysms of fever, which came on about noon. At 11 p. m., February 11, he had a hard chill which lasted for two hours. The fever rose quite high and was attended with vomiting. The patient became delirious, and from 2 a. m. to 9 a. m. he was comatose, his wife being unable to arouse him by calling, shaking or pinching. The coma was attended by stertorous breathing. I saw the patient about 10 a. m. He was complaining of headache and a slight burning sensation about his knees. Over each knee were large bullæ, extending from a few centimeters above the upper border of the patella to a few below the tubercle of the tibia. There were also two of much smaller size about the middle of the leg anteriorly. On the very black skin of this patient, these bullæ looked like burns of the second degree. The patient, in his delirium, had run across the room, taking his seat in a chair which sat before an open fire-place, in which were a few coals of fire. His wife states positively that he did not fall into the fire. His clothing was not burned. The temperature was 102 F., pulse 88, respiration about normal. The tongue was large and flabby, covered with a white coat; the mucous membranes were of fairly good color; the bowels were constipated, the spleen was enlarged, being palpable at the costal margin. The blood showed numerous estivo-autumnal parasites, all apparently of the same stage of development—about one-fourth the size of the red blood corpuscle. The urine did not show any albumin nor sugar.

Under vigorous antimalarial treatment for seventy-two hours, the fever subsided and did not return. The bullæ were pricked and a rather dark serum exuded. The places were dressed with gauze greased with vaselin. The patient was told to report if his legs gave him any trouble. I was called to see him again after about four weeks. I found gangrenous patches over areas referred to above, involving the skin and subcutaneous tissue. The ligamentum patella was exposed in the left leg. There was a gangrenous odor and the tissue was sloughing. The temperature was 99 F. The blood showed a few endoglobular, ring-form parasites and several estivo-autumnal gametes; red blood corpuscles, 4,028,000 per cm.; leucocytes, 6400. The differential count showed polymorphonuclears, 68.5 per cent.; small mononuclears, 23 per cent.; large mononuclears, 8 per cent.; eosinophiles, .5 per cent. Under the influence of quinin and antiseptic poultices, the gangrenous tissue sloughed away, leaving quite large ulcers which I show in the accompanying photographs.

The object in thus presenting this case in detail is to discuss some of the phases of malaria suggested by it, which are exceedingly interesting to practitioners in malarial regions. The first phase which I desire to call attention to is

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* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs. Frank Billings, George Dock and J. M. Anders.

PERNICIOUSNESS IN MALARIA.

The clinical forms of pernicious malaria have been recognized since Torti's classic description of the periodic pernicious fevers, in 1743. These do not differ materially from the graphic description by Dr. Joseph Jones, of New Orleans, of these fevers occurring in the southern portion of the United States.

Marchiafava and Bignami state that "since the time when the parasites of the tertian and quartan were first known, there is no instance on record of a malignant infection caused by them, and no autopsy has ever been made in connection with a spring tertian or quartan." However, in this country, a few cases showing pernicious symptoms in infections with the benign parasites have been reported. They must, therefore, be regarded as exceptions to the general law that "the malignant infections are caused by the summer-autumn varieties of the malarial parasites." My experience has been that the large majority of cases of malarial fevers occurring in the Mississippi Valley are estivo-autumnal infections.

Estivo-autumnal Infection, with Multiple Spontaneous Gangrene

It is a well-known fact that in these infections the estivo-autumnal parasites are found in exceedingly large numbers. If this is not shown in the blood from the peripheral circulation during life, the autopsy usually shows them markedly increased in the viscera. It also appears that there are usually two predominating broods of parasites, sometimes more, in the blood of patients with pernicious fever. But Marchiafava and Bignami report cases in which the viscera, as well as the peripheral circulation, show a very small number of parasites. Dr. Ewing emphasizes this point in his report on the cases of malaria at Montauk Point. The cases of pernicious fever where only one brood of the parasites is present, as seems to be the condition in the case I report, are not infrequent. So it is evident that we must look for the cause of malignancy in another direction than merely in the large quantity of parasites.

These causes may be found in what has been termed the biologic characteristics of the estivo-autumnal parasites. The first of these is their capacity for rapid propagation. This is seen in the great number of young forms which are seen in the blood a few hours after the beginning of the paroxysm. It is another characteristic of these parasites to disappear from the peripheral circulation to complete their cycle of development in other vascular areas.

The pathologic anatomy of these fevers teaches us that there is a decided tendency for the adult forms and forms of fission to accumulate in the capillary network of certain organs, e. g., the spleen, where the circulation is physiologically slow; in the brain, where the lumens of the vessels is small; and in the capillaries of the gastro-intestinal tract. Indeed, it has been proposed to explain the cerebral and choleriform types of these fevers by the mechanical obstruction thus produced in the respective areas. Frerichs thought this obstruction in the cerebral capillaries was produced by thromboses of malarial pigment. Laveran recognized the parasitic nature of these thromboses. Marchiafava and Bignami state: "Only exceptionally do we find in the cerebral vessels free pigment (thromboses of pigment), or masses of melaniferous leucocytes (thromboses of phagocytes), or rarely also free adult parasitic forms or accumulations of free spores (parasitic thrombi in the proper sense of the term)." But they attribute the cerebral hyperemia to the accumulation, in the cerebral vessels, of red blood corpuscles loaded with amebæ, this stagnation being brought about by the degenerative changes wrought by the parasites in the red blood corpuscles, which impair their capacity for free circulation.

Estivo-autumnal Infection, with Multiple Spontaneous Gangrene.

No doubt we should attribute great weight to the mechanical theory in explanation of these symptoms. Another factor, however, must be taken into account in these as in other forms of pernicious malaria, viz., the virulence of these parasites.

Many attempts have been made to demonstrate a malarial toxin, chief among which are the experiments of Professor Celli. The injection of 25 c. c. of serum, from a case of comatose malaria, into a little child, failed to show any toxic effect. The experiment to find the toxin shut up in the red blood corpuscles proved equally futile. Still, almost every one now speaks of the toxin or toxins set free at the time of sporulation of the parasites. There is good evidence for believing that a malarial toxin exists, although it can not be demonstrated, so it is probably this property of the estivo-autumnal parasites more than any other which accounts for malignancy in malaria.

It is known that many uninfected corpuscles give up their hemoglobin. The presence of brassy corpuscles, *the ottonati,* shows the toxic effect of the parasite in its endoglobular phase.

Another proof of the great virulence of these parasites is the occurrence of hemoglobinuria in these infections. It has been stated by a distinguished authority that hemoglobinuria is not malaria, because he has been unable to observe the correspondence between the amount of hemoglobinuria and the number of parasites in malarial fever; and in his series there was no case in which hemoglobinuria was present with a large number of parasites, whereas in many cases with a large number of parasites no hemoglobinuria was present. As against this view it is interesting to note the findings of the Malaria Commission to the Royal Society. It tabulated a series of 28 cases, including 17 reported by Koch, 3 by Ollwig, and 5 studied by the members themselves, in British Central Africa; and show that of these, 75 per cent. showed malarial infection. It also points out that of 21 postmortems in cases of blackwater fever, 90 per cent. showed malarial infection. In these cases, we most infrequently are unable to find the parasite in the peripheral circulation during the attack. I have seen them in only two of nine cases in which the blood was studied. But the blood affords other evidence of malarial infection than the presence of parasites in it, viz., the presence of pigmented leucocytes, and the characteristic leucocyte variation of malarial infection. There were pigmented leucocytes in all the cases studied by me. This pigmentation was seen especially in the large mononuclears. It has been stated that there is a true leucocytosis in these cases, i. e., an absolute increase in the white cells and a relative increase of the polymorphonuclears. I do not believe this statement is correct. Numerous observers have noted that there is often a large increase of white cells in pernicious fevers. Dr. Thayer reports one in which there was an enormous increase, but the differential count showed the characteristic variation of malaria—an increase of the large mononuclears at the expense of the polymorphonuclears. The malaria commission appointed by the Royal Society has made more extensive investigation of the leucocytes in the estivo-autumnal infections than I have been able to find elsewhere. As a rule, a slight leucopenia was found. During the intermission or the remission, when marked, there was a relative increase of the large mononuclears; but during the paroxysm of fever, the polymorphonuclears were not only reduced, but sometimes increased. The large mononuclears were increased at the expense of the polymorphonuclears when the large forms of the parasites were in the blood, and the polymorphonuclears were not decreased when the small forms were present. I have been able to confirm these observations in several counts recently made. In all 5 cases studied by them they found an absolute increase in the white cells, and the leucocytic variation characteristic of malaria. I made differential counts in 2 of the 9 cases referred to by me. One showed P. M. N., 64 per cent.; large L. M., 20 per cent.; S. M., 16 per cent. The blood was obtained during the decline of the fever, near the first intermission. The same patient showed P. M. N., 75 per cent.; L. M., 15 per cent.; S. M., 10 per cent. a few hours before death. Another case showed P. M. N., 64 per cent.; L. M., 19 per cent.; S. M., 16 per cent.; E., 1 per cent. So if pigmentation and leucocytic variations are evidences of malarial infection, where the parasites are few or absent in the peripheral circulation, hemoglobinuria must be malaria, and, being malaria, is a most striking evidence of the extreme virulence of the estivo-autumnal parasites.

Phenomena occurring in these infections, after the disappearance of the parasites, which have been termed post-malarial, are also evidence of the toxin theory. Kelch and Kiener, Mannaberg, and others, have noted the decrease in the percentage of hemoglobin after the disappearance of parasites. Dr. Ewing reports several cases of fatal anemia in his Montauk series, after the disappearance of the parasites. Dr. Thayer has reported a very interesting case of comatose fever, which he regards as post-malarial auto-intoxication. Marchiafava and Bignami state that, "in addition to the post-malarial fevers, there are individual cases of a post-malarial morbid condition, which must be put by the side of those which come after other infectious diseases (typhoid, pneumonia, scarlet fever, etc.)."

Another phase of malaria which the case reported suggests is

IMMUNITY

in malaria as it relates to the negro. We not infrequently see it stated that the negro is relatively immune from malarial infection, and sometimes that he is absolutely so. These statements are not in accord with my experience of eight years with the negro in the southern Mississippi Valley. Maurel, from his studies *on this subject, concludes that no human race is immune* from malaria, not even the black race.

On the plantation where I reside there were 24 whites last year. Of this number, 41 per cent. were infected with malaria. Of this number, however, 5 did not have malaria, and were away from home during the greater part of the malarial season. Excluding these, the malarial morbidity would be about 53 per cent. among the whites. There were 184 blacks; of these 61 per cent. were infected.

I have tabulated 20 cases of pernicious fever which I have seen since June, 1900, showing:

No.	Age.	Race.	Term of Residence. Days.	Month.	Type.	Result.
1	34	White.	34	June.	Hemoglobinuria	Recovery.
2	4	Black.	4	June.	Cardialgic	Death.
3	7	Black.	7	July.	Comatose.	Death.
4	60	Black	20	July.	Hemorrhagic, Melaena.	Death.
5	15	Black.	2	July.	Bilious continuous	Death.
6	3	Black	3	August.	Cerebral, convulsions	Recovery.
7	35	Black.	12	August.	Hemoglobinuria	Recovery.
8	55	White.	55	August.	Hemoglobinuria	Recovery.
9	4	Black.	3	August.	Comatose.	Recovery.
10	11	Black.	5	August.	Comatose.	Recovery.
11	5	Black.	5	August.	Cerebral, convulsions	Recovery.
12	55	White.	55	August.	Cerebral, delirium.	Recovery.
13	10	Black.	2	September	Comatose.	Recovery.
14	10	White.	1	September	Comatose.	Recovery.
15	18	White.	18	September	Hemoglobinuria	Recovery.
16	10	Black.	10	September	Comatose.	Recovery.
17	38	White.	10	September	Hemoglobinuria	Death.
18	30	White.	12	November.	Hemoglobinuria	Death.
19	60	Black.	12	February.	Comatose.	Recovery.
20	5	White.	60	February.	Comatose.	Recovery.

Of this number it will be seen that 12, or 60 per cent., were negroes. The mortality among negroes was 33 1/3 per cent.; among whites, 25 per cent. Indeed, I have seen the comatose, convulsive, cardialgic, gastric, choleriform, hemorrhagic and hemoglobinuric types occur in negroes, and in some death resulted.

The next phase which this case suggests is

GANGRENE IN MALARIA.

Several cases have been reported by Petit and Verneuill, in reviewing the occurrence of gangrene in connection with Raynaud's disease. These and others have been referred to by Barlow and Monroe. Osler reported a case of multiple spontaneous gangrene occurring in an estivo-autumnal infection, in the *Bulletin of the Johns Hopkins Hospital,* in February, 1900. He classifies three groups of gangrene: 1. In connection with Raynaud's disease. 2. Multiple spontaneous gangrene, in association with the acute infections, like measles, typhoid fever, typhus fever, scarlet fever, diphtheria, and malaria. 3. Multiple spontaneous gangrene of the limbs in young and middle-aged people without any obvious cause.

The case I report is one of multiple gangrene in an estivo-autumnal infection. I saw another case of spontaneous gangrene last year, which, from the clinical history, I regard as one in association with malaria. I regret very much that I could not get a blood-smear for examination, being without cover-glasses and slides at the time.

On March 27, 1900, the father applied to me for medicine for his child, C. S., a mulatto girl 4 years of age. He said that she had been having chills and fever for some time and was swollen about the face, hands, and feet. I prescribed iron, quinin and bitartrate of potash, under the influence of which, he said, the swelling disappeared. On May 16 I was called to see the child, and found her fairly well nourished. She had quite a high fever, with very rapid pulse and respiration. There was no edema and no eruption on the skin. The mucous membranes were anemic. The lungs were negative. There was no enlargement of the heart, and no cardiac murmurs. There was vomiting. The bowels were constipated; the spleen was enlarged, being palpable below the costal margin. The urine showed no albumin nor sugar. The child was put upon vigorous antimalarial treatment. On May 20, four days after my visit, the father reported that her fever had subsided and she seemed much better, but one foot was cold and apparently dead. The next day I visited the patient and found the right leg very cold as high as the knee, the toes in a state of dry gangrene, the dorsum of the foot black, with a few purpuric spots on the leg. The left leg appeared normal. There was no fever. A careful examination showed no endocarditis; there was no history of rheumatism. There were some pains about the knee on moving the leg. Another careful examination of the urine failed to show any albumin or sugar. I ordered a nourishing diet and tonic treatment, and advised the father to inform me when the line of demarcation formed. I did not hear any more from the patient until about two weeks afterward, when I happened to be passing the house, and asked how the child was getting along. The reply was, "Dat foot done come off." I went into the cabin and found the child sitting on a pallet on the floor, in very good spirits. On removing an old apron in which the leg was wrapped. I saw that spontaneous amputation had occurred at about the upper third of the leg.

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DISCUSSION.

Dr. E. H. Martin, Clarksdale, Miss.—I have not many criticisms to make, but I do wish to draw attention to a distinction between the forms of pernicious malaria spoken of; for instance, hemoglobinuria and the comatose forms are all classed as pernicious malaria. Hemoglobinuria may be pernicious, but never in the sense we regard the other. Hemoglobinuria is malignant in that the germs present cause an absolute destruction of the blood cells. The other form is pernicious simply from an overdose of the toxin of malaria. In other words, one is pernicious from an overdose of the toxin and the other from the malignancy of the germs causing a destruction of the blood cells. In the negro we see but few cases of pernicious malaria in proportion to the total number of cases. In adults we see but few cases of pernicious malaria. In small children, especially in the small white children, we have a great many cases; it is quite an uncommon thing for a white family in the swamp lands of Mississippi to raise more than two out of five children, on account of the pernicious malaria, and the reason, I think, is evident; the blood of a child is very rich in the pabulum which nourishes the malarial germs; the vital resistance is low, and comparative immunity unattained. A vast number of the malarial germs develop, producing toxin, an overproduction of which kills the patient. I do not think that the mechanical theory can hold good; there is no reason why a few germs, and broken-down malarial organisms, should stop up the capillaries of the brain of a white child and not do the same for a white adult or negro child; yet it is a fact that these children have the "congestive" type almost exclusively. This is the idea that we get in speaking of pernicious malarial fever, that the toxins develop rapidly and in large quantity, and are administered to the patient in lethal doses.

Immunity in the negro is real, but only relative. It is a well-known fact that the number of white people that are affected with malarial troubles is less in proportion to the number of negroes affected than it was supposed to be; this is on account of the use by the whites of gauze doors, mosquito bars, the administration of quinin, etc. The class of "poor whites" who live as the negroes do are nearly all sufferers from acute or chronic malaria.

There is some hemoglobinuria among the negroes; but, where there were 400 negroes and 100 whites, there were 30 cases of hemoglobinuria among the whites and but 1 among the negroes. So, the negro has a relative immunity. Again, this relative immunity may be lessened by residence in non-malarial regions; a negro returning from a residence in New York, for instance, has lost it to a certain extent, but, after he has been in a malarial district for a time this relative immunity is regained. The negro is not fully immune, but is more nearly so than the white man; and the white man who has resided long in a malarious locality has a greater partial immunity than a newcomer.

Dr. William Britt Burns, Memphis, Tenn.—In referring to the immunity in the negro, the word relative, as mentioned by Dr. Martin, is a good one to employ. The negro is not immune to malaria, but he is relatively immune. The negro has malaria in mild form; it is true he has malaria in malignant forms, yet they respond to treatment quickly, much more so than the white people. I have seen several cases of comatose malaria in the black negro, and I have seen them get well; they all get well. I have never seen a case of comatose malaria in the negro terminate fatally, but I have seen many cases among the whites, especially in children. I have no doubt but what the accumulation of the malarial toxins in children is very rapid, and it is a common saying in the delta of the Mississippi valley, in Arkansas and Louisiana, that we must not allow a child to have a second or a third chill; it is the commonest thing to see, in a very large percentage of the cases, a child with congestion or congestive chill who dies. I have seen very few get well in infancy after the paroxysm of congestion came on. I have seen negroes, comatose for hours, get well.

Dr. D. M. Hall, Memphis, Tenn.—I do not live in as malarial a district as those who have preceded me, and therefore I have not seen as many cases of malaria, especially of the malignant type. My experience, however, leads me to believe that the negro is relatively immune. I have seen a great many more cases of malaria among white people than among negroes.

I think that if you take an equal number of whites and negroes, under similar conditions of exposure, etc., a greater number of whites will have malaria than the negroes. I do not know why this is so. We have in the South negroes living in places where the mosquitoes are in droves and where the conditions are good for the production of the disease, and they live there with very little infection; yet, I am sure the white people could not live there without being infected. In one city in the South there is a little creek which runs through the town and a great deal of sewage is thrown into it despite the efforts of the board of health. This is a great breeding-place for mosquitoes and they are there in swarms; near this creek seems to be a favorite place for the negroes; they live there on its banks, in cabins, and they seem to be in good health. Yet the white people who live near there are greatly infected with malaria. Therefore, I do not think the negro is immune, only relatively so. I think he can be overcome by malaria, but this depends upon the quantity of the poison introduced into the system. It requires more of the poison, in a more virulent form, to overcome the negroes than it does the white people.

Dr. Delancey Rochester, Buffalo, N. Y.—I presume it is well known that the mosquito is one of the sources of malaria; I should like to ask the gentlemen present if they recognize any other mode of entrance of the malarial parasite into the body besides the mosquito.

Dr. W. G. Harrison, Talladega, Ala.—The negro is relatively immune to most every disease, except lung troubles. I remember, when a student of medicine, that Dr. Westmoreland, in his lecture, stated that the negro was greatly immune to most of the bad and alarming features of tertiary syphilis. I have watched closely since, and I am sure that what he said was true. I think the negro has some relative immunity to all diseases except those of the lungs. They die from pneumonia and tuberculosis most readily. I saw a family in February where five died from pneumonia in one week; in the same community I had five or six cases among the white men and none died; all had the same kind of medical attention, the same physician, the same nursing, etc. Negroes die rapidly from pulmonary diseases of every kind.

Scientific medicine is being introduced into the Southern malarial swamps. The physicians in Louisiana, Alabama, Georgia, etc., are rapidly learning the use of certain apparatus for the better diagnosis and treatment of disease. It is now necessary that any man who practices in the South should equip himself with a microscope and all other instruments for clinical diagnosis. I have seen many cases, some of them among the negroes, who were taken sick with some inflammatory trouble and they seemed in a fair way to recover, when there was an unexplained rise in the temperature; the microscope revealed the malarial parasite; without it the rise in the temperature could not have been explained. Recently, within the last six weeks, a little girl of 2 years was brought to the hospital with cholera infantum; she got along slowly. Under the use of the saline solution she gradually got better, but, after one week, without any apparent reason at all, there occurred an elevation of temperature. I expected a return of the vomiting and watery passages, but they did not appear. After thirty-six hours an examination of the blood revealed some of the organisms of malaria. Under the proper administration of quinin the patient promptly got well. Regarding the statement that negroes are more susceptible to all diseases, I can only say my experience is very different. They easily contract smallpox, and most of them have latent syphilis, but I am sure the race possesses a distinct relative immunity against all the fevers, stomach and intestinal derangements, rheumatism, gout and many other maladies.

Dr. Victor C. Vaughan, Ann Arbor, Mich.—I saw many cases of malaria in Cuba in 1898, and a large number of these were of the comatose variety. While I can not give any exact figures, I am under the impression that the comatose form of malaria, as we saw it in Santiago, was relatively quite as common among the negro soldiers as among the whites. Some time ago I went through the army records investigating this matter, and while I can not give exact figures, I am confident that the general statement that I have just made is correct. The last speaker surprised me when he stated that the negro is immune to many diseases to which the white man is susceptible. The question of relative immunity between races is an important one, and I do not believe that definite conclusions should be stated until we are sure of the data on which they are founded. Only a few years ago it was believed that the negro was quite immune to yellow fever, but later epidemics have shown that this is not true. When yellow fever prevailed in our army in Santiago in 1898, two companies of the 24th Infantry, composed of negroes, were detailed as nurses on account of their supposed immunity to the disease. Practically all of these negroes became infected, and the mortality was quite as great as it was among the whites. It should be stated that this regiment had long been stationed in the western part of the United States, and possibly the negroes composing it had lost any racial immunity that they may have originally possessed. I have always been of the opinion that the white man is hardier and as a rule less susceptible to the infectious diseases than the negro, and I am surprised to hear it stated here that the negro is largely immune to most of the diseases to which we are susceptible. In this country tuberculosis and pneumonia are the most fatal of the infectious diseases, and certainly the negro is quite as susceptible to either of these as the white men, and the mortality is greater among the blacks. I am also convinced from extended observation that the negro succumbs to typhoid fever quite as readily as does the white man.

Dr. G. W. Goins, Breckenridge, Mo.—I wish simply to ask a question whether, in the practice of any present, many cases with a malarial symptomatology have occurred which simulated more or less typhoid fever and which did not yield to the administration of quinin.

Dr. Louis Schwab, Cincinnati, Ohio—Several of the gentlemen have spoken of a malarial imprint upon other diseases. This has been noticed in the progress of many of the diseases, particularly such that usually run an uninterrupted course. In the Millcreek valley, in which I live, many of the acute infections are observed to be disturbed in their behavior by malaria, and this belief is strengthened by the fact that quinin generally corrects the interrupted course. One reason why, in the treatment of the negro, better results are obtained by remedial agents, is perhaps because doses are more heroically given. This is particularly true where quinin is indicated for malarial affections. The statement that the negro enjoys an immunity from syphilis seems singular and can only be explained by invoking the belief that his immunity exists because he is born with the taint. The frequency with which unlooked-for fatal results occur in the negro is a matter of common observation on the part of those who have much to do with him. Sometimes, with no apparent reason for the fatality, death occurs, and it has been assumed by many that he loses his nerve just at the time he most needs it. It is known that the negro is very impressionable; this is best demonstrated by his conduct at religious exercises where in his excitement he is led to exhibit his fear in the most peculiar manner. It may be that a sense of impending danger lowers his resisting power and explains why he dies when there is no reason for it. Dr. W. S. Christopher, of Chicago, once applied the term "negroitis" to this manifestation.

Dr. Joseph Brayshaw, Berlin, Ill.—In Central Illinois we have a few cases of malaria that so much resemble typhoid fever that a diagnosis can only be made by means of the microscope; but we have a large number of typhoid fever cases that so clearly resemble malaria that were it not for the Widal reaction and the absence of the malarial parasite a diagnosis would be impossible. We frequently have typhoid fever without pea-soup stools, without rose spots, and without very much abdominal tenderness, while we frequently have abdominal tenderness to a marked degree in malaria. The typhoid condition and typhoid tongue are frequent in our cases of malaria.

Dr. T. B. Futcher, Baltimore, Md.—I should like to emphasize one important complication in malaria which Dr.

McElroy has already referred to in his paper, i. e., the occurrence of multiple gangrene in malaria. I was fortunate in having had an opportunity of seeing the case of gangrene of this nature which was under the care of Dr. Osler. The patient was a man, 23 years old, who was admitted to the surgical side of the Johns Hopkins Hospital, with dry gangrene over the dorsum of both feet, the heel of the right foot, and symmetrical patches over the fingers of both hands. There were, also, one or two large patches over the gluteal regions, and two small areas over the occiput. The case was at first a puzzling one from an etiological standpoint. There was slight elevation of temperature, and this, with the existence of an enlarged spleen, led to the examination of a specimen of fresh blood, which revealed numerous typical malarial crescents. This suggested the possible relationship between the malarial infection and the gangrene. Accordingly, the patient was transferred to the medical side and immediately placed upon anti-malarial treatment, quinin being administered in large doses. The patches of gangrene were treated locally. Improvement began at once, and the patient soon recovered from the local lesions. This was the first case of malarial gangrene that we have had at the Johns Hopkins Hospital out of a total of over 2000 cases, and it is undoubtedly an extremely rare complication. The case illustrated the importance, in cases in which the etiology is obscure, of a careful examination of the blood.

I should like to add that my impression in regard to the relative frequency of malaria in the two races in Baltimore, without having definite figures at hand, is that the negro race is practically as frequently affected as the white.

Dr. W. D. Haines, Cincinnati, Ohio—We have all seen delirium tremens follow in the wake of an accident, fracture, etc.; in the so-called moderate drinkers, on the other hand, we have seen malarial fever manifest its influence immediately after some surgical procedure. This would seemingly indicate that the prerequisite principle in either instance lay dormant until some exciting cause demanding extra attention on the part of Nature becomes operative. This is somewhat at variance with the usually accepted theory of disease, viz., that the host must prepare for the reception of the guest. We are exposed daily to the infectious principles of diphtheria, typhoid fever, tuberculosis, etc., and still we do not contract these maladies, forsooth the soil is sterile. On the other hand, how frequently we observe patients with lowered vitality or injury become an easy prey to these infections.

The statement made by one of the speakers, Dr. Harrison, astonished me not a little. He said: "The negro enjoys immunity from syphilis." It seems to me as I now recall personal experience in the treatment of this race that I have seen more cases of active syphilis in the negro than all other races combined. I never ask a negro *whether* he has had syphilis, but *when* he had it.

MEDICAL SHOCK.[*]

O. T. OSBORNE, M.A., M.D.

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Before discussing what I interpret to be a condition of medical shock, it may be well to say a few words concerning the justification of ever rendering a certificate of death from "heart failure." Far be it from my purpose to excuse, justify, or encourage the use of this term to aid ignorant certifiers of undiagnosed deaths, or to give a mystic covering to illegitimate deaths, whether due to actual malpractice, or to the careless use of active drugs.

It may be said that the certificate of death from medical shock or heart failure is unjustifiable, because, if we seek carefully enough, we will find a cause for the failing heart, such as myocarditis, fatty degeneration, an endarteritis or atheroma of the coronary arteries, etc., which causes, however, can many times be diagnosed only on the autopsy table.

Neurasthenia, which is a condition and not an entity, is recognized as a legitimate cause of death, but the pathology of this condition is more intangible than the condition of heart failure.

I do not wish to advocate the use of the term "medical shock" for conditions of failing heart, due to distinct pathologic conditions, or due to the gradual break-up or overpowering of the system by very acute or prolonged processes, but I think the term justifiable, when a badly acting and gradually weakening heart is the most urgent cause for anxiety, and its weakness is out of all proportion to the pathologic condition or symptoms present.

I believe it to be a fact that the hearts of our patients cause us more and more anxiety every year. If we doubt this statement, we have but to trace the treatment of acute conditions from the period of bleeding, calomel, tartar emetic, or other depletions, gradually down to the present time to find that first there was a cessation of depletions; next, the avoidance of nauseating doses of anything, denoting a greater care of the stomach; next, forced nutrition; then the general disuse of such drugs as aconite and veratrum viride; next alcoholic stimulation, and now we even note the loss of vasomotor pressure from alcohol and use strychnin in its place. This all means that the hearts of to-day do not withstand fevers or other systemic upsets as they formerly did.

To be specific, we are as justified in using the term "medical shock" as we are in using the term "surgical shock," and that the symptoms of heart failure which develop so unexpectedly in acute cases otherwise progressing satisfactorily, are due to this condition of shock. We all know the symptoms, viz., a more or less rapid heart, but with the least movement or excitement made very rapid; a soft, irregular, perhaps dicrotic or intermittent pulse; incomplete inspirations without much actual dyspnea, interspersed with frequent sighs, and the subjective symptom of precordial oppression. The temperature is generally low, the flesh cool and clammy, and if quick relief is not obtained, death will soon take place, caused by heart failure or medical shock.

The pathology of surgical shock is believed to be a paralysis of the vasomotor system, causing primarily a bleeding of the body into the large abdominal vessels, splanchnic paralysis, and secondarily great loss of heat from the dilated surface vessels.

I believe that medical shock is just as certainly a vasomotor paralysis, except, perhaps, in severe acute malignant affections where there may be a great destruction of red blood corpuscles. As a consequence of this paralysis, the major part of the blood is in the abdominal veins. The blood flows slowly into the dilated and, therefore, non-elastic arterioles; hence, slowly in the capillaries, and returning slowly in the veins, but imperfectly fills the heart cavities. The heart, not only from imperfect filling, but also from impaired nutrition, contracts irregularly, incompletely, and arrhythmically. The aorta has not the pressure ahead or the forcible quota of blood from behind, and consequently does not give enough elastic rebound to force blood properly into the coronary arteries, and the heart muscle is improperly nourished. By the lowered pressure, and the normal blood pressure is so vital, all the functions of the body begin to fail, all digestive processes are imperfect, and undoubtedly normal oxygenation is impaired, molecular death begins to take place, at least almost unaccountably gradual failure of body and mind occurs, till death closes the scene.

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[*] Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs. Frank Billings, George Dock and J. M. Anders.

Surgical shock is more frequently caused by injuries to certain areas of the body than to others, such as the head, neck, splanchnic region or testicles. Many cases of operative shock are undoubtedly due to the intense pain from severed nerves, without loss of blood.

Returning again to medical shock, we find that severe, acute nerve pain will, if continued, give a lowered vasomotor tension, and if too long continued or too severe, vasomotor paralysis or shock, perfectly similar to that due to profound injuries of these nerves, or surgical shock. The nerves most likely to cause such lowered blood pressure from pain are exactly those which, if injured or operated on, are most liable to cause surgical shock, viz., in the region of the heart, solar plexus, the neck, the head, and the testicles.

We often see this depressed heart and softened pulse from precordial pain, or from a genuine migraine, or biliary and renal colic. The vasomotor depression is quickly shown in these cases, but in any subacute or chronic nerve pain, sooner or later, this condition, possibly mildly evident, supervenes. Even in hysterics and neurasthenics, imaginary pain can and does cause the same depression; in fact, a true neurasthenic is probably not much else than a patient in a chronic state of diminished blood pressure and semiparalysis of the vasomotor system.

Chronic organic diseases without pain do not cause symptoms of shock until profound anemia occurs. In acute fevers a successful issue is generally assured if the heart, and that really means the vasomotor system, can withstand the strain. The strain means the intensity and persistency of high temperature, the amount absorbed of the suppurative or putrefactive products of the pathologic process, plus the absorption of fermentative products due to intestinal stasis, and the central depressing influence of the toxins produced by the specific germ. If we can sustain the vital powers, and what does this mean other than the vasomotor tone, until the elimination of such poisonous products exceeds the absorption, our patient will get well, even if we have to fight through a tedious convalescence, showing the amount of muscle and nerve strain through which the patient has passed. In other words, our whole aim in acute feverish processes should be to make the elimination at least equal to the production of these decomposition and fermentative products, and to prevent the absorption of these products if possible. This means, specifically, to cause all of the emunctories to do good and proper work, or if one is impaired, to increase the action of another, and to keep as clean as possible every localized suppurating or inflammatory process that may be going on. The good results of such treatment are markedly evidenced in typhoid fever. By laxatives and intestinal antiseptics we reduce the temperature, clean the ulcerating surfaces and prevent fermentation from giving more toxins, and from producing that most troublesome condition of tympanites, with its liability to cause hemorrhage and perforation. A considerable portion of the persistently high temperature and bad pulse of typhoid fever is due to the added and often neglected factor of bowel-infection.

In all diseases or conditions where there is a piling-up in the blood of absorbed poisons, be they from typhoid or dysenteric ulcers, pus collections, malarial plasmodia, or hemoglobin debris, cancerous disintegration, or catarrhal edematous mucous membranes, which are such fine culture-grounds for all germs, any treatment that hastens the evacuation of the excreted bile, impregnated as it is with toxins, made temporarily inert by the good offices of the liver mechanism, will prevent systemic and nervous poisoning and ultimately vasomotor disturbance and medical shock.

Hence, in any disease, to forestall the condition which I have termed "medical shock" we should take every means to prevent the absorption of secondary toxins, or in other words, we should endeavor to prevent double infection. We should carefully promote nutrition, not overloading the stomach, stimulate the heart either with alcohol, strychnin, coffee or camphor, as indicated, and stop too acute, or too long continued, subacute pain. Coal-tar antipyretics and analgesics should be used with the greatest care. Of course any hemorrhage should be treated as the surgery of the part decides, and any subnormal temperature by every known method to keep up the normal heat of the body.

If medical shock occurs, we must treat it on the same general principles as laid down for the treatment of surgical shock. All cardiac and vasomotor medication should be administered hypodermically, as the stomach will not absorb in this condition of shock, and the tolerance of enormous doses of active drugs, as digitalis, given by the stomach for the shock of delirium tremens, is due to the very slow or non-absorption of it. Small quantities of hot liquids taken into the stomach can but do good by their warmth.

I have purposely but briefly mentioned the shock due to acute malignant infection, which may be largely profound acute anemia due to destruction of the red blood corpuscles. I have wished to emphasize the frequency and the pathology, as I interpret it, of the attacks of heart failure as we see it in our acute cases. Many deaths attributed to the acute disease present are really due to this condition of medical shock or heart failure. We all frequently have cause to combat, sometimes successfully, sometimes unsuccessfully, these attacks of medical shock. Whether we term this "medical shock," or "heart failure," we know that can we hold this heart and vasomotor system for a short time longer, our patient will recover from the disease which has attacked him.

DISCUSSION.

Dr. C. W. Lillie, East St. Louis, Ill.—It has long been a question whether the term "heart failure" is a proper one to use at any time, and especially as it is condemned by those who are looking for accurate statistics regarding the causes of death. It seems to me that the term, as used in the paper, would seem to cover the conditions produced by a number of influences exerted upon the patient by disease, i. e., by combined influences rather than by shock. The term shock I believe should be restricted to those cases in which there are influences of a direct character applied in such a way as to immediately overcome the vital forces. These influences can be overcome, or prevented, by the use of such general tonics as are indicated, and especially by strychnin. It does not seem to me that the term "medical shock" would be a proper one to apply.

Dr. James J. Walsh, New York City—The term "medical shock" seems to deserve a place in the discussion of certain difficult fatal cases, the etiology of which is as yet unsettled. For a time the term heart failure was employed, but owing to the abuse of it, has fallen into disrepute. There are, however, undoubtedly cases in which owing to the development of some nervous condition the heart stops beating though no lesion can be found postmortem. Most of us have experienced certain cases which, especially those beyond middle life, when attacked by some acute gastric or intestinal condition, are liable to paroxysms of heart disturbance, and may prove fatal. Sometimes death is almost instantaneous and would seem to be due to the shock of pain. It is as if irritation of the digestive ends of the vagus led to irritative reflex, inhibitory impulses that brought the heart to a standstill. This state of affairs reminds one of nothing so much as surgical shock. What the underlying basis for surgical shock is we do not know. It seems an excellent idea, however, to have the analogous term, "medical shock," to apply to certain non-surgical cases, because this will stimulate the investigation of both conditions, so as to solve the important problems they involve.

Dr. C. A. Kelsey, Minneapolis, Minn.—By whatever term we call it, surgical shock, heart failure, or any other term, we all experience the same anxiety when we are confronted with the condition. During the reading of this excellent paper one thought came to me which I would like to discuss here. In diseased conditions where heart failure is liable to occur, is it the wisest plan to fortify the patient against its occurrence, or shall we reserve our agents until the critical moment comes and they are demanded? I have sometimes thought that we make a mistake by crowding the hypodermic injections of strychnin, or other powerful heart tonics, in cases where it does not seem to be positively indicated. I have in mind a case of diphtheria in a child occurring not long since, in which the consultant advised beginning and continuing the use of heart stimulants by the hypodermic method in order to anticipate heart failure. That plan was pursued, the nurses were provided with the hypodermic syringes, and they continued to use the injections. But, when the critical point did come and the heart failed, the heart then refused to respond to stimulation and the patient died. The point I want to raise is this: Is there not a possibility of making a mistake in commencing the heart stimulants before they are positively indicated and thus get the system so accustomed to the stimulants that the heart fails to respond at the critical moment? A man in a race does not use the spur at the beginning, but at the proper moment; if he did use it at the beginning the horse would fail to respond to it when the proper time came.

Dr. George W. Webster, Chicago—Whether we employ the term heart failure, or weak heart, or surgical shock, or medical shock, we should, all of us, be ready, at all times, to recognize the condition. I believe there is no one point on which there is less clearness of conception than in regard to this matter of failure of weak heart, and the conditions which bring about a weak heart. I know that there are many physicians who, when they examine the heart with a stethoscope for the first time, and find no murmur and no apparent intrinsic cause for the heart giving out, pronounce it sound. We should remember that a weak heart may be brought about by overwork due to both intrinsic and extrinsic causes; it may be due to valvular lesion; or the right side may be overworked from causes in the pulmonary circulation, and the like; or the left heart may be overworked from systemic conditions, as a general arterial sclerosis; the heart may fail from toxemia due to many causes, such as alcoholism, gout, syphilis, or from the toxins produced by various acute infections. There are many of these toxins which influence the heart muscle directly, and both the intrinsic and extrinsic nervous mechanism of the heart. Again, the heart may fail from failure of nutrition, which may be due to disease of the coronary arteries, primary or secondary anemias, or reflex causes.

I remember an experience that I had as a medical student about twenty years ago. We had a rabbit upon which we were going to experiment, and that animal was actually scared to death. The conditions found were these: The heart was found to be absolutely bloodless and the abdominal veins were enormously distended with blood; in other words, the animal bled to death into his own veins, the veins presided over by the splanchnic nerves. There was a failure of the heart from the nervous influence. Mental emotion may of itself be sufficient to cause a dilatation in the splanchnic area, so lowering the arterial pressure, causing the heart to fail. If we use the term heart failure we should remember that it is merely a convenience for classifying, not in any definite way, but to cover up a large number of things where we were unable to make an accurate diagnosis.

Dr. R. C. Newton, Montclair, N. J.—I agree with the last speaker in regard to the inadvisability of calling conditions "medical shock" which are due to toxemia, to weakness, to overstraining of heart muscle, and perhaps to overdrugging. I think the term is confusing. If we use this term it will convey to the laity the impression that the physician has done something or allowed something to occur to the patient that could have been prevented. I agree with Dr. Osborne's explanation of the condition, and think that his paper describes vividly a pathological state with which we are all more or less familiar. The paper is interesting and instructive; but it seems to me that if a new name be needed for this condition a better one might be found than the one the Doctor suggests.

Dr. Osborne, closing—I have but little to add. I do not feel that I ought to back up the term too strongly, yet I think we should have some other term to denote this condition. Heart failure is an opprobrium. If we amputate a man's leg and the man dies we should not say that he died from the amputation of that leg. The way to treat medical shock is to prevent it in much the same way that we prevent surgical shock; there is a prevention for medical shock as there is for surgical shock. I think the term medical shock will help us in making up our statistics.

THE SPREAD OF TUBERCULOSIS BY COUGHING.*

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PHILADELPHIA.

The general opinion held by the medical profession at large has been that tuberculosis is disseminated chiefly by sputum, pus from tuberculous ulcers and sinuses, and from the dejecta of the bowel in persons or in animals suffering from tuberculous enteritis; these substances, from whatever source, becoming dry and later pulverized; they, together with their tubercle bacilli, are carried about by the currents of air. Such dust is commonly agitated by sweeping and dusting of carpets, rugs and furniture in rooms previously occupied by tuberculous patients. Indeed, the investigations of Cornet[1] go far to corroborate this popular belief.

Cornet showed that dried sputum—dust—remained dangerous for months. He collected dust from the floors, walls and furniture of rooms previously occupied by persons suffering from pulmonary tuberculosis in various prisons, hospitals, asylums, and private dwellings, and, inoculating animals with such dusts, he determined the presence of virulent tubercle bacilli. Of the 118 samples of dust collected from the rooms of phthisical hospital patients, 40 were found capable of producing tuberculosis in animals by inoculation. Dust collected from 21 medical wards was also proved to contain living virulent bacilli in 15 of such samples. In one instance the dust was found to be infective six weeks after the death of the patient. Cornet,[2] to prove further the infectiousness of such dust, shook in a room a carpet infected with tuberculous sputum dust, and forty-eight hours later placed in this room 48 healthy guinea-pigs, of which number 46 developed extensive lesions of tuberculosis. Attempts to infect animals by the blowing of tuberculous sputum dust was attended with negative results.

Heron, in the City of London Hospital, and Hance,[3] in the Adirondack Cottage Sanitarium, do not find tubercle bacilli common in the dust of these institutions, being found in but 1 of the 17 specimens studied. These and other investigators have shown that the air and dust of certain institutions and dwellings occupied by consumptives were contaminated with tubercle bacilli, and this, in connection with the clinical fact that healthy persons who occupied such places were likely to develop tuberculosis, furnished additional support to the belief that infection took place through the respiratory tract; and that the sputum was the chief source of danger, seemed evident.

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* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee of the Section: Frank Billings, George Dock and J. M. Anders.

The swallowing of bacilli from the mouth or upper respiratory tract has long been regarded as a dangerous procedure, as has also been the feeding of infants on milk from tuberculous cows, as shown by Cornet.[4] Klebs, Gerlach, and others have shown that milk from tuberculous cows is capable of producing the disease in animals fed upon such milk. Further, it has been shown by Klebs, Parrot, Aufrecht, Chauveau[5] and other observers, that if the sputum from consumptives be incorporated with the food for susceptible animals, such animals develop tuberculosis. It will suffice to make mere mention of direct infection, since such instances are comparatively rare, and certainly occupy a small percentage of all tuberculous processes.

Flugge[6] was probably the first to consider the question of the dissemination of tubercle bacilli by coughing. "It is not at all proved that inhalation of dried sputum dust can produce tuberculosis in healthy men. If there is infection in healthy men this can be produced either by contact or inhalation, not so much by dried dust as by sputum which is spread in the air in finest drops in coughing." This spray composed of droplets containing tubercle bacilli may float in the air for some time, and be carried by fine currents about the room. Flugge regards this spray to be the true cause of infection, and to support this view he compares the results obtained by spraying dried sputum and moist sputum into cages occupied by experimental animals, in which cases the latter only gives positive results. He calls attention to persons who cough with closed lips, and to those who allow the mouth to remain open while coughing; of these, the latter class only is regarded as dangerous, and this danger is obviated by the avoidance of hard coughing, or the application of a handkerchief to the mouth while coughing.

Laschtschenko continued Flugge's experiments by demonstrating that this spray containing bacteria was produced by loud talking, coughing and sneezing. For this purpose the bacillus prodigiosus was added to the mouth fluids, after which agar-agar plates were exposed in various portions of the room, and in this way the bacilli were recovered at a distance of ten meters from the patient after hard coughing. Tuberculous patients were permitted to cough into a glass box, in a distant portion of which a bowl containing distilled water was placed. This water, after being exposed to the spray emitted by an indefinite number of coughs, often contained tubercle bacilli. Glass plates were exposed one-half to one meter (19.75 to 39.50 inches) distant from the patient's mouth, when he was directed to cough against them, and by the staining of such plates tubercle bacilli were occasionally found.

J. J. Curry,[7] at the suggestion of Prof. Edwin Klebs, studied 12 cases of pulmonary tuberculosis, in all of which the sputum contained tubercle bacilli. Examination of the mouth fluids at various hours during the day, by staining, resulted in the detection of tubercle bacilli in 9 of the cases; bacilli were most plentiful during the morning hours and after a paroxysm of coughing. In 6 of these 9 positive cases, it was extremely difficult to demonstrate the bacilli in the mouth fluids. Glass plates were suspended before the patients, at distances of from one to three feet, during coughing. These plates presented two varieties of spray, one composed of very fine drops, the other of larger drops, one to five millimeters in diameter. In these larger drops were the tubercle bacilli found, 28 being the largest number noted in the large drops. By the staining of these plates Curry obtained positive results in 50 per cent. of cases.

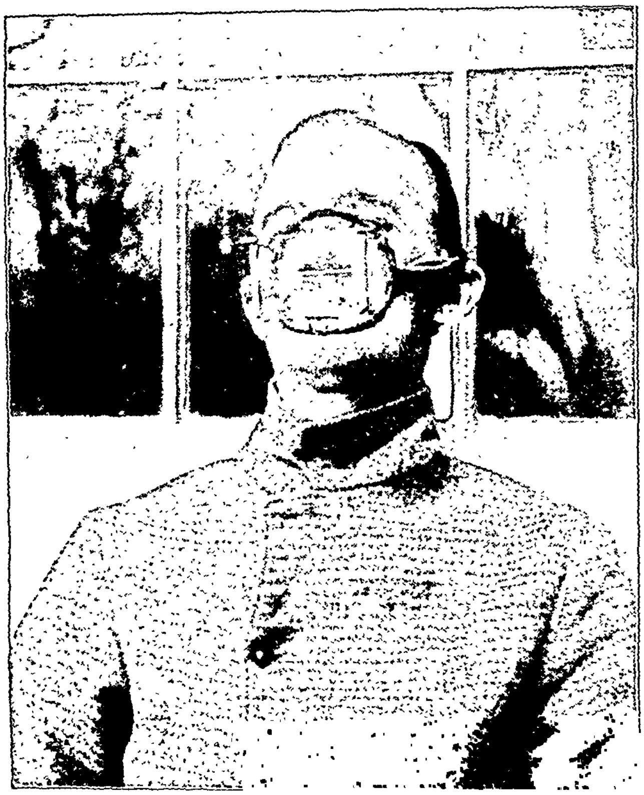
W. Goldie,[8] assisted by Dr. Southerland and Mr. Young, repeated the experiments of Flugge, his assistant Laschtschenko, and Curry. They confirm the statements made by Laschtschenko by using an emulsion containing the bacillus prodigiosus in the mouth; they found that most colonies developed on plates exposed ten feet distant from the patient and at an elevation of five feet, during coughing, these findings being influenced by vigorous coughing and by currents of air. It was further shown that plates were infected at a distance of ten feet by laughing, six feet by loud talking, three feet by ordinary talking, while deep breathing seldom infected plates, even at a few inches from the mouth. During ordinary talking for two minutes, 90 droplets fell on a four-inch glass plate placed eight inches from the speaker, each droplet containing bacteria. Clean glass plates were held six inches from the mouths of phthisical patients while coughing, for twenty-four hours, and when stained by carbol-fuchsin gave positive results, as follows: 60 per cent. of all cases; 60 per cent. where cough was accompanied by expectoration; 33 1-3 per cent. where cough was not accompanied by expectoration; 28 per cent. where plates were used during a single coughing in the morning, and 14 per cent. when used during the evening. The droplets varied from a few (50 microns) to many millimeters in diameter, and were composed largely of thick mucus and leucocytes. Single fields, under the oil-immersion lens, were seen to display from 125 to 200 tubercle bacilli. The mouth fluids were rarely found to contain bacilli, and only when the sputum was noted to be profuse or liquid.

M. P. Ravenel[9] collected, on pieces of soft pine wood, the spray thrown out by tuberculous cows in coughing, by placing the wood near the bottom of a nose-bag which the animal wore for a variable time. In cases where only a small amount of spray had collected, this, when transferred to cover-glasses and stained, was always found rich in tubercle bacilli, and it was possible to demonstrate the bacilli in the spray from every tuberculous animal studied. Of 22 guinea-pigs inoculated with portions of this spray, 11 became tuberculous. Guinea-pigs were exposed to the breath of tuberculous cows, but in no instance did infection occur. Noteworthy is it that these cows were not all in the later stages of the disease, one living for more than two years after the experiments were made.

The causes which prompted me to investigate the degree with which tubercle bacilli are disseminated by coughing were as follows: 1, from the mouth of an inmate of the Philadelphia Hospital who presented the conditions common to advanced phthisis, I noticed that fine droplets of sputum were ejected with each cough, and 2, I observed that coughing was often excited by eating, not only in patients confined to their beds, but also in those able to walk to the dining-room. It appeared to me that if this fine spray contained tubercle bacilli, when produced in such quantities in the dining-room where it must of necessity fall upon the food to be eaten by others, as well as those producing such spray, furnished a potent factor in the dissemination of tuberculosis, and possibly explained why patients in the early stage of the disease did not do well in this institution, where every possible attention is given to ventilation, light, and the disinfection of sputum.

METHOD OF COLLECTING SPRAY.

This was accomplished by means of a mask (Figs. 1 and 2). It was made from German silver wire, one piece of which is molded to fit the face, resting on the nose, cheeks and chin. To obviate any irritation to the patient, this portion was covered by a piece of rubber tubing. Suspended from this wire is a second oblong portion provided with two lateral grooves, which serve to accommodate two microscope slides. When the mask is in position the slides are held directly in front of the mouth and nose, at a point three inches distant from the lips. The mask is held in position by an elastic band which passes above the ears and over the occiput.



Patients were allowed to wear the mask with the clean slides in position for from one to one and a half hours, during the day when they were apt to cough least and were instructed to remove it during a paroxysm of coughing. It was never worn during the morning or evening; the object being not to collect on the slide the spray produced by vigorous coughing, which had already been studied, but to determine whether or not consumptives emitted a fine spray, when talking, laughing, clearing of throat or by their characteristic hacking, that was in any way dangerous to the health of their associates.

Fifty patients, 34 males and 16 females, all of which presented unquestionable evidence of either pulmonary or laryngeal tuberculosis and in whose sputa tubercle bacilli had been found, were made to wear the mask as above described.

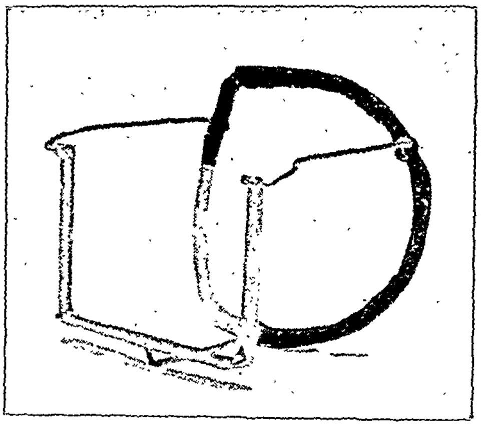
NAKED EYE APPEARANCE OF SPRAY.

This varied greatly and since patients were cautioned not to encourage coughing, no satisfactory explanation for such changes was noted. Certain slides displayed many droplets, varying from the size of a pin's point to that of its head. Others showed few droplets, while a third variety presented an evenly-spread film, very thin, covering the entire slide and seldom showing any distinct droplets.

MICROSCOPIC STUDY.

Specimens were fixed and stained by carbol-fuchsin and Gabbett's acid blue solution. Of the specimens collected from 50 patients, those from 49 were found to contain bacteria—the diplococcus and the streptococcus being the most constant, yet baccili and clusters of cocci were not unusual. A single minute droplet often contained organisms of each class.

Of these 50 specimens, 38 were found to contain tubercle bacilli in variable numbers, four to six bacilli being the smallest number found in any specimen, and many of the specimens, under a 1/12 oil-immersion lens, showed fields of bacilli too numerous to be counted. In fully one-third of the positive cases the bacilli were very numerous. In one of the specimens where I hunted for fully one hour and passed the specimen as one not containing tubercle bacilli, Dr. W. J. Hawke, resident pathologist, in studying this slide later, found a droplet containing more than forty bacilli. I am further indebted to Dr. Hawke for his untiring interest and valuable assistance rendered.



Among other findings were large and small squamous epithelium and occasionally very small epithelial cells more or less intimately connected with thick mucus and leucocytes. The tubercle bacilli were commonly associated with these elements, but were occasionally found singly or a number of bacilli without any other elements in the field.

CONDITIONS INFLUENCING THE SPRAY.

From patients showing tubercular laryngitis and from those who talked loudly, or who were frequently clearing their throats, the most spray was found. In patients very weak, speaking only in a whisper, scarcely any spray collected on the slide and this seldom contained bacilli. Men wearing heavy mustaches ejected no spray on the slide until after the mustache was held from falling over the mouth. Coughing with the mouth open must necessarily favor the production of the spray.

Of the 12 negative cases, these explanations are given: Sputum from 3 such patients contained only few bacilli and these were not found until after several examinations, none being found at the time when the specimen slides were collected. Another showed no bacilli in his sputum, yet autopsy revealed cavity formation. Three were extremely weak and did not talk while wearing the mask. The remaining 5 presented marked sprays containing many bacteria; yet careful examination failed to reveal the presence of tubercle bacilli.

The detection of the bacilli in these fine droplets of the spray was greatly facilitated by the use of a low power lens for the purpose of locating such droplets; after which a 1/12 oil-immersion lens was used. Droplets not perceptible to the naked eye were often found in this manner, and such minute particles not infrequently contained tubercle bacilli; at times they were present in great numbers. By the employment of these methods, it can be stated with safety that the finding of tubercle bacilli in the spray emitted by consumptives during the act of coughing, sneezing, laughing, and talking, is not attended with greater difficulties than is the finding of the bacilli in the sputum of patients early during the course of the disease.

VALUES IN DIAGNOSIS.

These are doubtless limited. However, from the extreme difficulty one always meets in eliciting satisfactory physical signs from the chest examinations of the insane, and since we are seldom able to collect the sputum from such patients, it would appear that if they be carefully guarded by the attendants, this method of collecting their sputum for clinical study should have at least a limited field of usefulness. In nearly all instances a slide could be placed in a forceps and then held by an attendant before the patient's mouth during one or more vigorous coughs. In one instance, that of a colored female, aged 19, few bacilli were found after wearing the mask for one and a half hours, during which time she did not cough, while the spray from a single cough during a paroxysm showed many bacilli. Where the mask was worn for ten minutes during such periods great numbers of bacilli were found.

Children, likewise, seldom expectorate and a mask could readily be adjusted to the face of any child, and by carefully instructing the nurse, specimens could be collected during the acts of coughing or crying. This, as well as its value in the clinical study of the insane, must be further tried, and estimated only from the results obtained.

HYGIENE.

Now that it is shown that the secretions of the mouth and respiratory tract are atomized and given off in the form of a fine spray, in both health and disease, and that this spray contains bacteria and other cellular elements known to be common to such secretions, it is reasonably fair to suppose that many other diseases are conveyed by this medium, and that the work accomplished through the study of consumptives is but a step in a direction which bids fair to modify, in a measure at least, the hygiene of infection. Conditions affecting these organs and consequently their secretions must of necessity be spread in this way; especially is this true of diphtheria, tonsillitis, and possibly other conditions, the etiology of which is not definitely known, such as smallpox, measles, scarlet fever, whooping cough, mumps, etc. It further furnishes additional cause for the rigid disinfection, now universally carried out, in connection with all cases known to be infectious in character.

Droplets alighting on clothing must serve as a favorable means to convey disease from house to house; and that man may become infected by the spray thrown off by horses, cows, and other domestic animals suffering from glanders, tuberculosis, influenza and similar affections, appears highly probable.

SURGICAL VALUE.

To repeat, "experiments show that during ordinary talking for two minutes, ninety droplets may fall in a four-inch circle at a distance of eight inches, each of these droplets containing from dozens to thousands of bacteria." (Goldie). At first this would tend to convey the impression that the danger of infecting open wounds during an operation by the sprays produced by the talking of the surgeon or any of his assistants is extremely great, and this would doubtless be true where any person assisting in the operation is suffering from either an acute or chronic infection of the mouth, throat, or respiratory tract. A fact ever to be borne in mind is, that in health this spray may contain great numbers of bacteria; yet few, if any, such organisms possess the properties necessary to infect man, even when introduced into an open wound. The advisability of all persons being provided with a mask of gauze on entering the operating room, to prevent all possibility of their contaminating the air of the room, would appear from a bacteriologic standpoint to be a rational procedure; yet before this precaution can be urged, it, too, must be tried by the surgeon, and shown to lessen the number of cases of infection for which at present no ascribable cause is given.

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TREATMENT OF CERTAIN FORMS OF CANCER BY THE X-RAYS.

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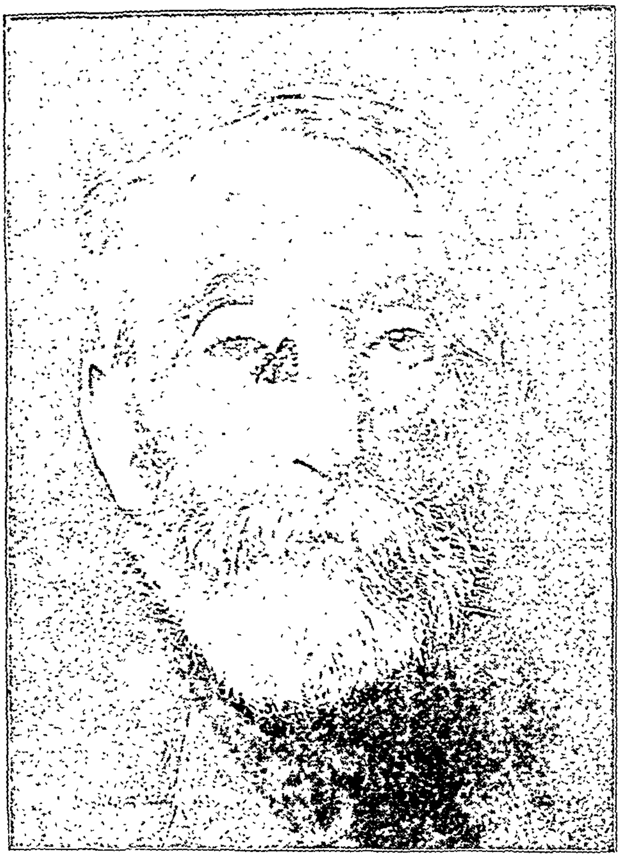
It is well recognized that cancer is on the increase, and reliable statistics made in various countries and extending over periods of years prove that the rapidity of this increase is surprisingly great. Any method of successful treatment, even though it may be limited in its application to certain forms of this disease, will prove to be a great boon to humanity. Further, as is natural with the advance in the application of science to medicine, the opportunities for the irregular practitioner will be curtailed.

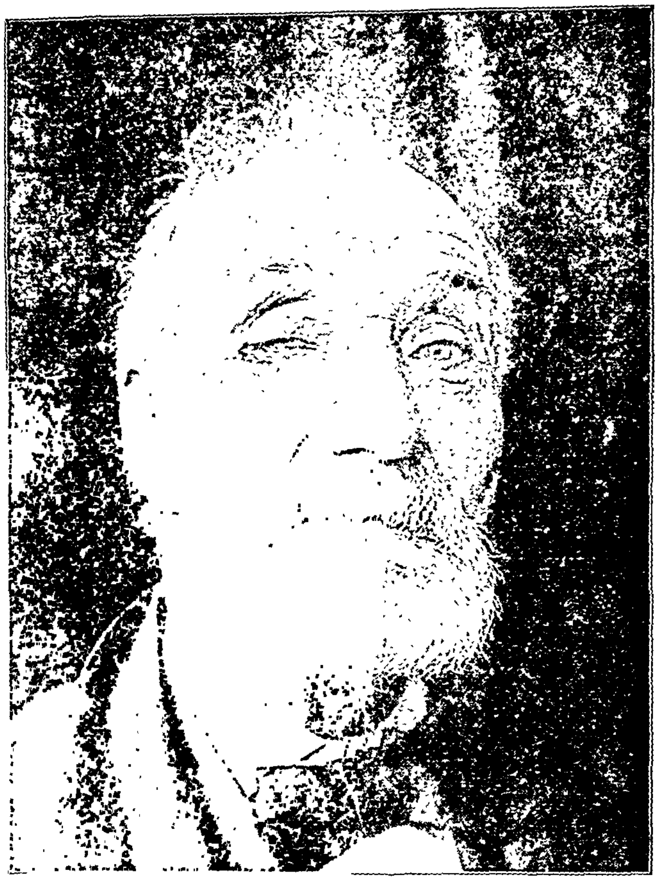
Although I shall refer to but few of the cases I have treated, I hope to present enough to have the reader share my opinion, namely, that in the x-rays we have an agent which causes superficial external forms of cancer to heal; and this may be done without pain to the patient.

From the standpoint of treatment by the x-rays, cancers may be divided according to their position into external and internal forms. Of the internal cancers

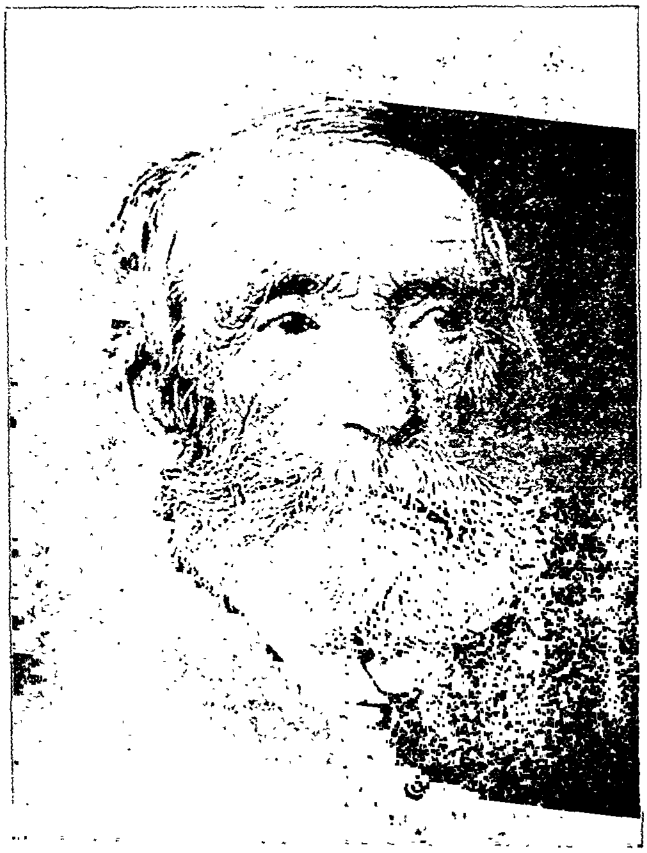
I will not speak at the present time, as it seems better to wait until I have had more experience with them, but will take up the external forms, which thus far appear most suited for treatment by this new method. I think the subject can be best presented by a brief report illustrated by photographs of some of the cases that have been or still are under my care.



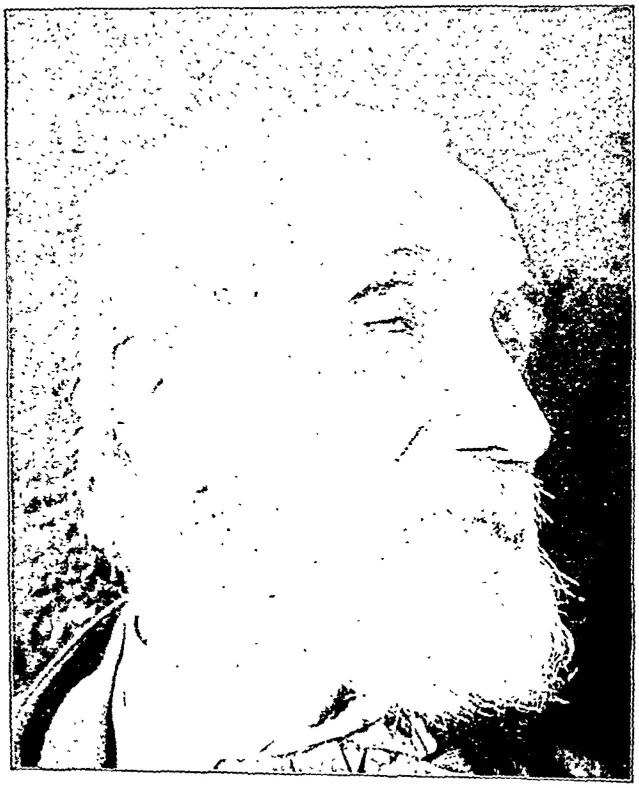
Rodent Ulcer. Before treatment.



This case shows how harmless the X-rays may be, when carefully used, even near the eye.



Rodent Ulcer, duration fifteen years. After treatment by X-rays. The ulcer, which was a deep one, healed by first filling up from the bottom and then closing over. The healing went on without pain or inconvenience to the patient.



By further treatment by the X-rays this has improved more than is shown in these photographs.

The diagnosis in all the cases which I have treated, except one, which was undoubtedly a rodent ulcer, has been made by means of the microscope. They include epidermoid cancers, typical epitheliomas, and rodent ulcers, and also cases which had the clinical appearance of beginning cancers, but which under the microscope were found to be plasmoma, or simply cases of ulceration and necrosis, or chronic inflammatory tissue.

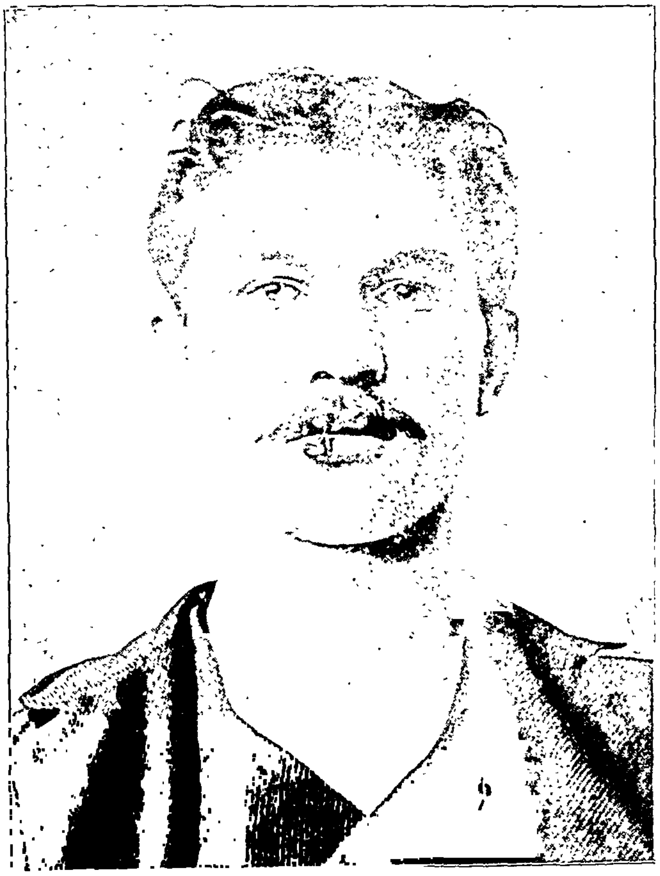
As the first cases of cancer yielded to treatment by the *x*-rays, I became sanguine enough to state to new patients that this method would cause the growth to disappear if it were cancerous in nature; if, however, the microscope showed that it was not of a serious form, I felt obliged to give a doubtful prognosis. But further experience teaches me that those growths which clinically resemble beginning epitheliomas also yield to treatment by the *x*-rays, and the indication is that we have in this new agent a useful therapeutic measure for most—possibly for all—forms of external new growths, except perhaps those due to syphilis.

From the fact that the *x*-rays are useful in treating a variety of abnormal conditions of the skin, or parts near by, it would seem that their local action must stimulate healing or that these abnormal conditions are due to organisms to whose life or life conditions the *x*-rays are inimical.

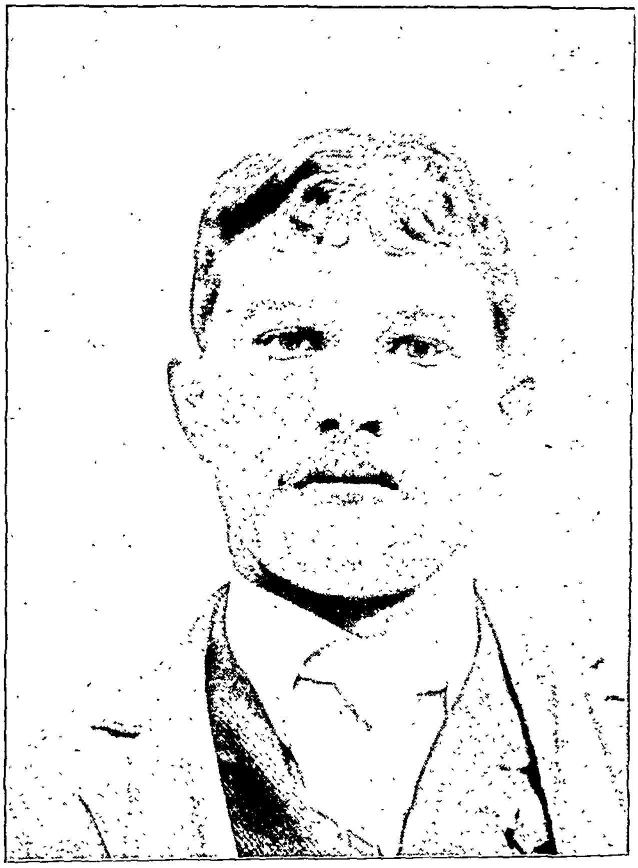
Thus far, all the forms of superficial growths mentioned above have yielded to treatment by the *x*-rays. That is to say, in every case, with the exception of one of rodent ulcer where the treatment was pursued for a short time only—and of course should not be included—the new growth has disappeared, or is improving under treatment. It would therefore seem that we have undoubtedly for external growths, a new, painless and harmless form of treatment, and also one which yields excellent cosmetic results. Whether these new growths will return within two or three years, can only be determined by time; but if there should be a recurrence, treatment can again be instituted.

This form of treatment also has the advantage of causing a diminution, or cessation of the pain resulting from the new growth, and the disappearance of foul odors from discharging ulcers. Further, it should encourage patients who have suspicious growths to consult a practitioner in regard to them at the very earliest moment, and not delay, as many are inclined now to do, through dread of the knife, until the growth has attained greater size and caused more inconvenience.

Great care is necessary to carry out the treatment properly. First, the surrounding parts should be protected from the action of the rays, and second, the treatment should not be pursued so vigorously as to cause an *x*-ray burn. While in making the ordinary *x*-ray examinations—as, for example, examining the heart and lungs—there is no risk whatsoever to the patient, of an *x*-ray burn, in treating cases of cancer it is necessary to have the tube so near the patient that, in unskilful or inexperienced hands, a burn may result. This might be a serious matter, as such burns yield only slowly, and might cause disfigurement. I do not mean to suggest that an *x*-ray burn is a necessary result of the treatment in external cancers; quite the contrary, for all of my cases have been treated without the occurrence of this accident, but I desire to emphasize the necessity for care.



Epidermoid Cancer of Lip.



Epidermoid Cancer of Lip. After treatment by the X-rays.

The details of treatment and the various precautions to be taken I have considered fully in my book on "The Roentgen Rays in Medicine and Surgery," and therefore will not present them here, as it would occupy too much of your time.*

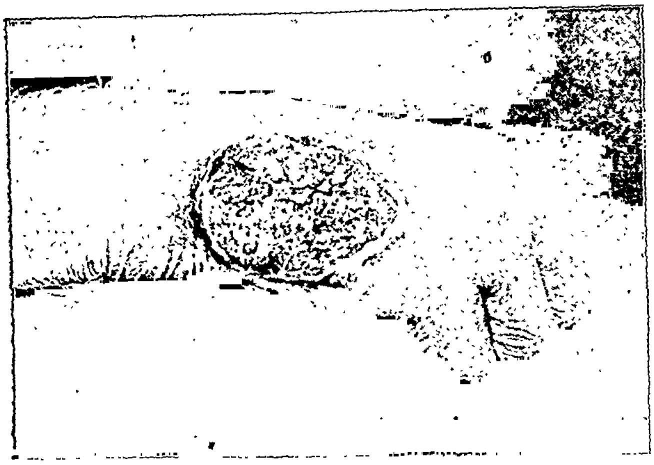
In the following cases from which these photographs were taken, the microscopic examinations were kindly made by Dr. F. B. Mallory, assistant pathologist of the Boston City Hospital.

The first is an epidermoid cancer of the lip, and the photographs show the results obtained. The diminished amount of hair seen above the lip is not due to the *x*-rays, but to the fact that the patient shaved off his mustache after the first two photographs were taken, but let it grow again shortly before the last two were made.

The second case is an epithelioma of the eyelid, which was treated without causing the slightest trouble in the eye and without interfering with the work of the patient. Treatment was suspended for a time in this case, owing to my absence, but the improvement, already begun, continued during this interval.

The third case is that of a rodent ulcer on the side of the nose and cheek. The photographs, taken before and after treatment respectively, need no comment. They speak for themselves, like those already shown.

The last case that I shall take up is an epithelioma of the right hand, and is improving, but still under treatment. The growth was cauliflower-like in form, four centimeters wide by seven long, with raised, indurated edges. The photograph shows the condition before treatment was begun. In inoperable cases, such as those of the orbit, the tongue or the larynx, the *x*-rays should be tried in the most thorough manner.



Typical Epithelioma of Hand, before treatment by X-rays. This was 4 cm. wide and 7 cm. long.

The external growths that I have treated with good results have varied in the length of time they have existed from a few months to twenty years. This fact shows that even when the growth is of long standing the *x*-rays are of assistance.

It has been known for many years that these growths yield to treatment by various forms of caustics, so that if the *x*-rays simply act as a new form of caustic, some of the older forms might rather be employed; but my experience shows that we have in the *x*-rays a therapeutic agent that is novel in its mode of action, and that these growths disappear without a burn being produced.

The advantages of this new method may be summed up as follows: The treatment causes no pain; healing is produced without creating a burn; some cases improve after a certain number of sittings without further renewal of the treatment; the treatment can be carried out without interfering with the work of the patient.

The disadvantages are that the necessary apparatus is expensive and difficult to use; that great care must be exercised when the *x*-rays are employed as a therapeutic agent, and that the treatment must often be continued for some weeks.

THE RELATION OF UNBALANCED PHYSICAL DEVELOPMENT TO PUBERTAL MORBIDITY AS SHOWN BY PHYSICAL MEASUREMENTS.*

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The measurements upon which this paper is based were made by the Child Study Department of the Chicago Public Schools, under my direction as Chairman of the Department. The gentlemen composing this department are Mr. F. W. Smedley, Director, and Messrs. C. C. Krauskopf, Daniel P. McMillan, and C. Victor Campbell, assistants. These gentlemen are all thoroughly equipped for the work, and large experience in making measurements has made them exceptionally accurate, and this skill on the part of the observers gives great weight to the observations. I wish to acknowledge particularly my indebtedness to Mr. Smedley, who jointly with me has discussed every phase of the work done by the Department, and every detail of its official publications.

The tables are based upon the measurements of 6259 children, 2788 boys and 3471 girls. Seven measurements were made of each child, except that no ergographic work was done with children under 5 years of age.

The children examined were all pupils in the Chicago Public Schools and were mainly the children of American parents in comfortable circumstances, the schools where the examinations were made being selected with reference to these points. In each school, however, all pupils were examined. These measurements include net stature, height sitting, weight with ordinary indoor clothing, endurance as measured by the ergograph, strength of grip of the right hand, strength of grip of the left hand, and the so-called "vital capacity" or volume of expired air. The methods of making these measurements, and the instruments employed were described in my paper "Measurements of Chicago School Children," read before this Society last year, and therefore need not be repeated here.

Table 1 gives the norms for each sex, in each of the several measurements, at each of the ages from 4 to 21 inclusive. These norms have been determined by averages, the actual computations being made with the aid of an adding machine. The table also gives the average ages and the number of children of each age examined. The norms given last year were medians, and a comparison of the two tables will show that they differ but slightly from each other, except at ages at which the number examined was considerably increased, and even in such cases the differences are really not great, the greatest difference in stature, for instance, which is found being only 13 mm. The close coincidence of these tables measures their approximation to the truth.

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* The cuts shown herewith are inserted by permission of the MacMillan Company.

* Read before the American Pediatric Society, at Niagara Falls, May 29, 1901.

At the time of making the measurements, the birthday of each individual was recorded, and from this the exact age in years, months and days was computed. All those having the same age *in years* were grouped together, and the averages of the exact ages, as well as the averages of the several measurements were calculated. As will be seen from the table, where the ages are expressed in years, months and days, the average ages approximate the even half years, but differ from them more or less, and in both directions. By determining the exact number of days between consecutive ages, figures were obtained which upon division into the corresponding differences in the other measurements gave the average daily increments of those measurements at the several ages. With the aid of these factors the norms were reduced to the integral years and half years. These norms we have called birthday norms, and they are given in Table 2. Table 3 gives the average monthly increments of the several measurements at the different ages. With the aid of these monthly increments and of the table of birthday norms, the average normal measurements of a child of any age can readily be computed.

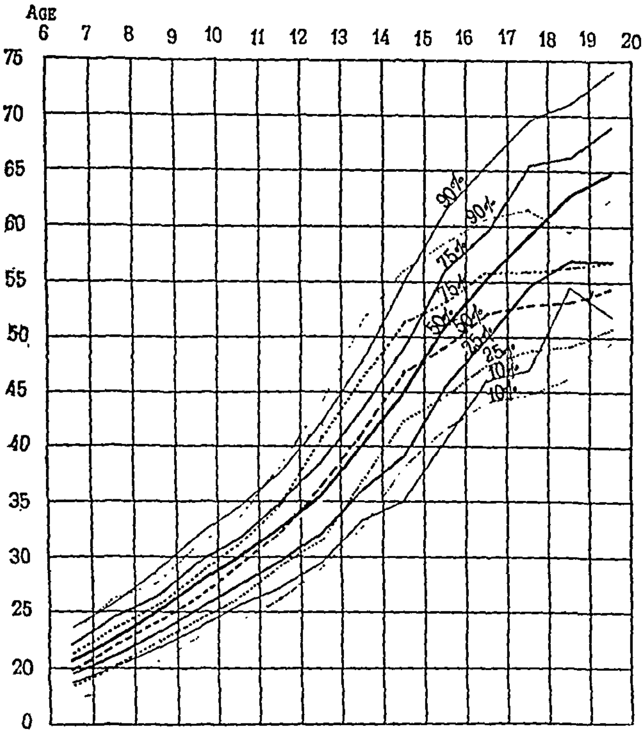

CHART 1.—Weight of pupils distributed into percentile groups. The dotted lines represent the girls; the solid lines the boys. Based on data in Table IV.

Table 4 is based upon the distribution of the children measured into percentile groups. Thus, of all the 4-year-old boys measured as to stature the shortest was 86 cm. tall; 10 per cent. were below 96 cm.; 25 per cent. were below 98 cm.; 75 per cent. were below 104 cm.; 90 per cent. were below 107 cm.; and the tallest measured 116 cm. On such basis this Table 4 has been computed, the distribution into percentile groups being given for each of the several measurements taken, for each age and sex. As originally printed in the second report of the Child Study Department, this table contains some errors. These errors have been corrected from the original records of this Department for the table here presented, and the table will be found correctly printed in the Forty-sixth Annual Report of the Chicago Board of Education, which will appear soon. The items of this table which relate to weight are shown graphically in Chart 1.

Table 5 shows separately for each sex and for each of the physical measurements taken the following points: 1, the special measurement under consideration, at the beginning of each year, as shown in the table of birthday norms; 2, the increase in that measurement found at the beginning of the next year, or the increment during the year; 3, the percentage that this increment is of the measurement at the beginning of the year during which it has occurred. These percentages of annual increase are shown graphically in Charts 2, 3 and 4.

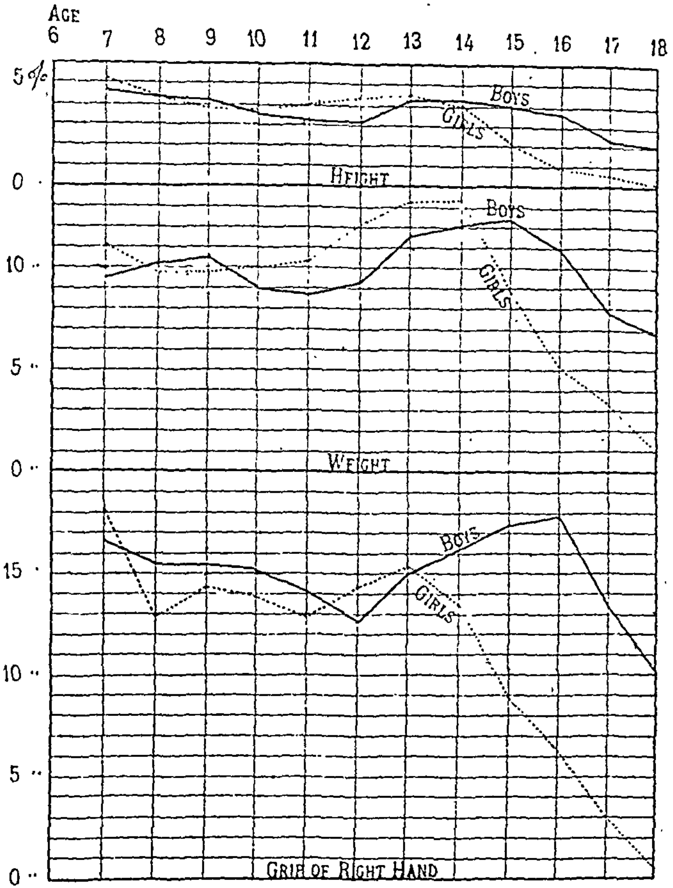

CHART 2.—Rate of annual increase in stature, weight, and strength of grip. Based on data in Table V.

An examination of these charts reveals some important truths of child life. First directing attention to the chart of annual percentage increase in height of boys, it is seen that the general trend of the curve is downward. From 7 to 9 the line is practically straight and if extended will be found to coincide with the line from 17 to 18. But from 9 to 12 the curve drops below this general trend, indicating a period of relative quiescence in growth. From 12 to 17, however, it rises above the line of general trend and indicates a period of accelerated growth. The curve for girls shows a less well-marked quiescent period, a better marked and shorter rise, and a

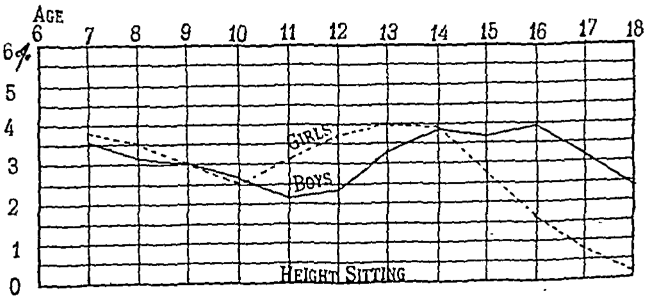

CHART 3.—Rate of annual increase in height sitting. Based on data in Table V.

greater and more rapid decline. In each of the other measurements it is seen that there is a sharp rise commencing at 11 or 12 in boys, and generally a year earlier in girls, and in general following the conditions noted with regard to stature. It does not seem justifiable to attempt an interpretation of the minor features of the curves, but the following seems to me to be fairly shown:

There is an exaltation of life processes at the pubertal period which finds its expression not only in an increased rate of growth, but also in the development of physical power. This exaltation is preceded by a period of relative quiescence. In the sexes this exaltation differs in that it commences earlier and has a shorter duration in girls than in boys; moreover, it is more marked in girls than in boys in weight and in stature, and less marked in measurements involving physical power.

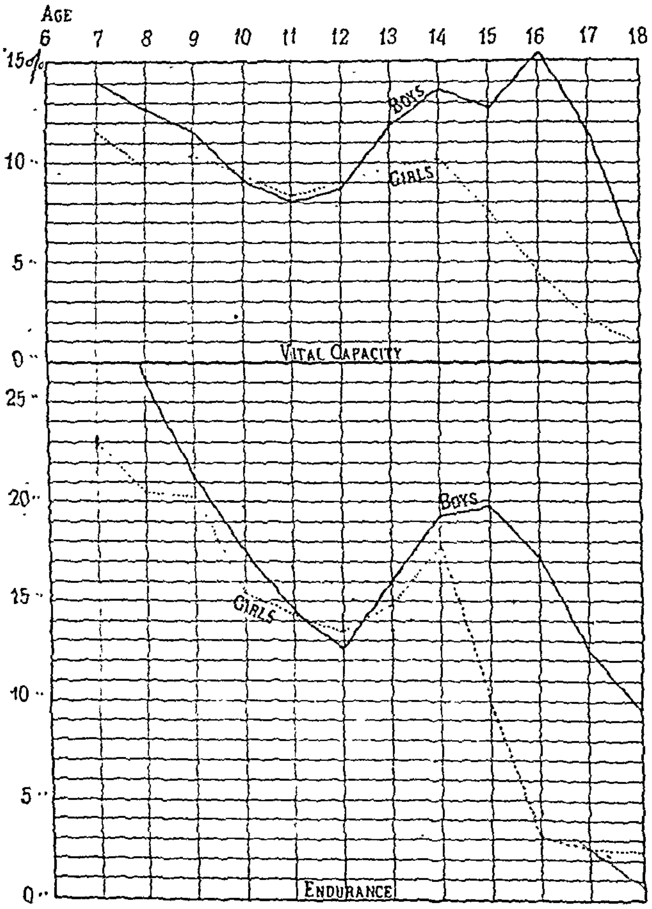

CHART 4.—Rate of annual increase in vital capacity and endurance. Based on data in Table V.

This pubertal exaltation has often been shown before as to height and weight, but I am not aware of any other investigation which shows it to be true of so many physical measurements.

In Table 1 the averages of each measurement for each age are given. The curves *representing* these averages are necessarily lines, but it is certainly true that there is a range of variation about *these lines which* must be considered normal, so that normal measurements should be represented by a belt rather than a line, for certain purposes at least.

Tables 6 and 7 and the *corresponding* charts show an attempt to investigate the nature of *this belt. For* this purpose the tables of percentile groups are utilized. Tables 6 and 7 are classified with reference to the sexes, ages, and the several physical measurements made. Each section of these tables *gives* four columns. The first column *gives the difference in the measurement*, or the range of the measurement, between the 10 per cent. group and the average given in Table 1. The second column gives the range between the average of Table 1 and the 90 per cent. group. The third column gives the range between the 10 per cent. and the 90 per cent. groups, or the range of measurement of the middle 80 per cent. of the children. The fourth column gives the difference in measurement between the 25 per cent. and the 75 per cent. groups, or the range of the middle 50 per cent. of the children. Columns 3 and 4 are graphically represented in Charts 5 and 6, while columns 1 and 2 are graphically represented in Charts 7 and 8.

From examination of Chart 5, which shows the absolute range of measurement of the middle 50 per cent. *and the middle 80 per cent.* of boys, it is clear that there is a general pubertal increase in *the range of the measurements* of both groups of the children, and that this increase in range is more marked in the larger than in the lesser group. Chart 6, relating to girls, shows these facts with reference to girls rather more clearly than they are shown with boys. Moreover, the pubertal increase in range occurs earlier in girls, as was to have been expected.

It is still necessary to determine how the ranges of measurements are distributed with reference to the average measurements at the several ages. This is shown in *Charts* 7 and 8, which show that in both sexes the *range is distributed* almost uniformly about the average line. While puberty is a period of great *exaltation of life processes*, Charts 5 to 8 show that it is also a period of great individualization. It is a time when the weak fail and the able forge to the front.

It is well known that mortality is less *at puberty than* at any other period of child life, and Axel Key has shown that the morbidity is high at this period. In my judgment, the explanation of the low mortality will be found in the laws illustrated in Charts 2, 3 and 4, while the conditions shown in Charts 5, 6, 7 and 8 will be found to have an important bearing upon the causation of the high morbidity.

The neuroses, psychoses, neurasthenias, cardiopathies, deformities and anemias of puberty are the principal morbid manifestations of the physical, intellectual and emotional turmoil which characterize the period.

At first thought it would seem that the subnormal portion of the belt shown in Charts 5 to 8 would contain the children who present the pathologic conditions. This, however, is not the case. It is the great range of the physical measurements of this period which *permits* of the existence in the child of an *enormous* lack of balance *in the physical* measurements, and it is this *condition* of lack of balance which gives rise to the morbid manifestations. For *instance, if in a child the normal exaltation* of height and weight, or of either, passes beyond, or taxes heavily, *the capacity* of the organs of nutritive supply, *the child* is on the borderland of physical insolvency, and any excessive voluntary expenditure of energy may be followed by morbid symptoms. In one case under my care (see Case 1), a neurotic boy, who increased in weight with great rapidity, had an epileptic convulsion follow every instance of excessive exertion. One such seizure followed a 20-mile bicycle ride, and another a game of baseball. He was practically free from convulsions as long as he refrained from unusual expenditure of energy. Rapid increase in stature, associated with deficient nutritive supply, is commonly productive of stoop and muscular atrophy, and is usually accompanied with rapid and irregular pulse, and manifestations of fatigue and neurasthenia. It is in such cases also that the dilatation of the heart, well known to occur at puberty, is to be found. These cases require for their proper management rest, improvement in general nutrition, and the much-despised shoulder braces.

In general it may be said that an important factor in pubertal morbidity is unbalanced physical development.

The great range of pubertal measurements which makes possible the extensive unbalanced physical development of the period, being physiologic, is directly traceable to heredity, but there are factors other than heredity which assist in the production of the actual lack of balance itself, and which must be taken into consideration in determining the management of individual cases. These factors are nutrition and the physical and mental activities of the child.

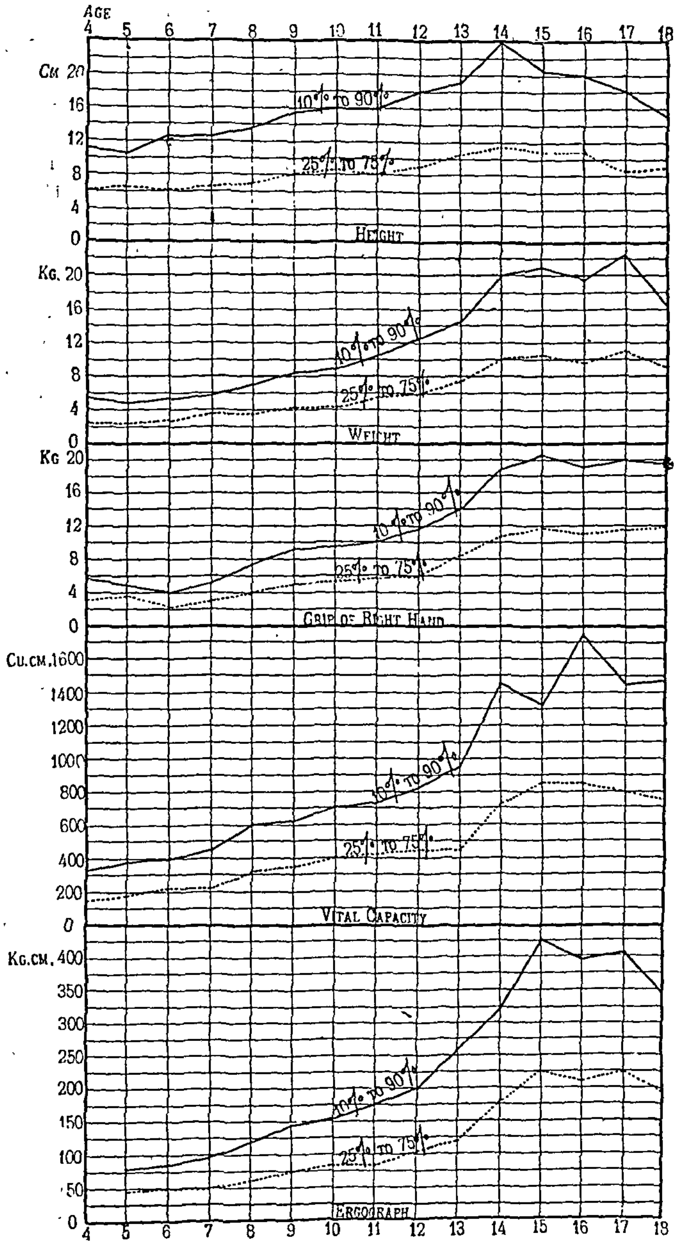

Chart 5.—Absolute range of measurements between percentile groups—Boys. Based on data in Table VI, columns 3 and 4.

I present here a plan for the investigation of cases of unbalanced physical development. The first three divisions of this plan are in general etiologic, and the last three are in general resultant, but such a classification would not be strictly accurate, for examination will show that some of the factors of the second group bear at times etiologic relations to factors in the first group, which means that vicious circles exist and that some conditions mutually augment each other.

PLAN FOR INVESTIGATION OF CASES OF UNBALANCED PHYSICAL DEVELOPMENT.

1. Hereditary tendencies and influences.
2. Nutrition. *(a)* Food supply (quantitative and qualitative). *(b)* Condition of nutritive organs, viz.: gastroenteric tract and liver. *(c)* Condition of the blood. *(d)* Type of the general metabolism. *(e)* Condition of the eliminating organs.

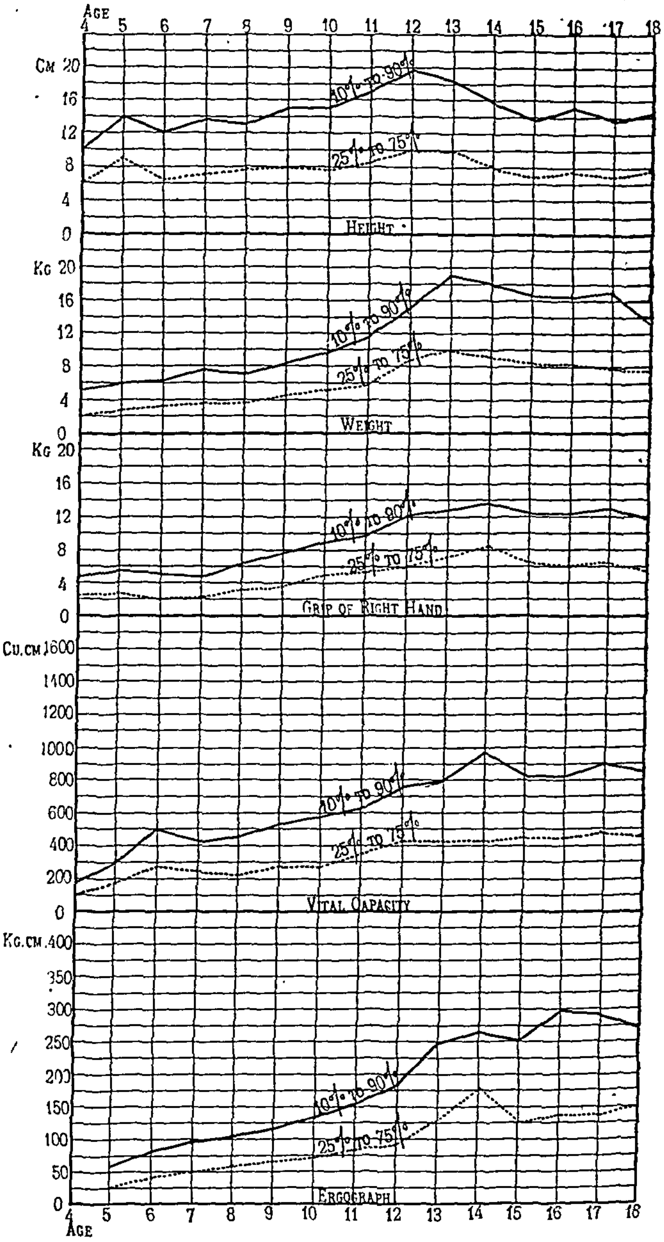

Chart 6.—Absolute range of measurements between percentile groups—Girls. Based on data in Table VII, columns 3 and 4.

3. Activities, physical and mental.
4. Commensurable physical conditions for which norms have been determined for comparison. *(a)* Weight. *(b)* Height. *(c)* Height sitting. *(d)* Strength of grip; right and left. *(e)* Vital capacity. *(f)* Endurance.
5. Relative capacity of other organs to demands made upon them, especially the heart and brain, and for which norms as to capacity do not exist, and possibly cannot be determined, but which must be estimated by means more or less indirect.

6. Conditions and symptoms resulting from the lack of balance.

For purposes of illustration a few cases are presented. With each case brief descriptive notes are given, together with a series of measurements of heights and weights. The age of the patient at the time of each measurement is given, together with the age at which the measurement found will be the normal average, according to Tables 2 and 3. This gives a basis for estimating the condition of developmental balance. In these cases no attempt at completeness of exposition is made, as it would only obscure the illustration of the condition of unbalanced physical development and its resulting morbid manifestations.

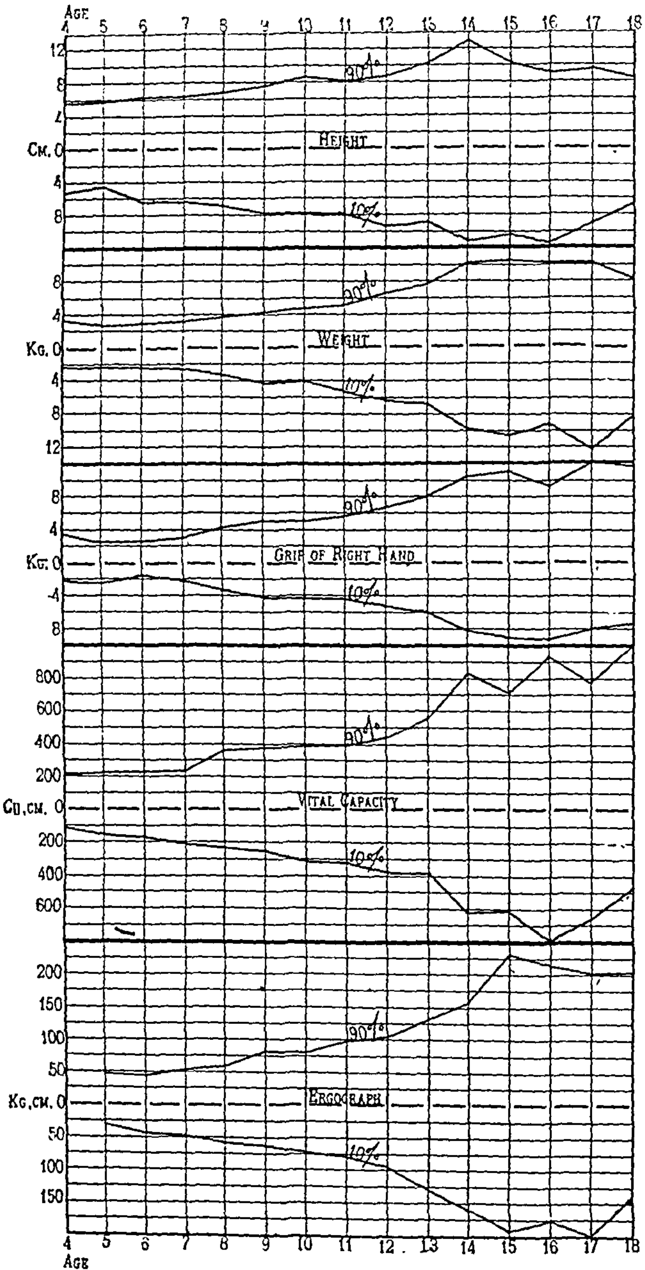

Chart 7.—Absolute range of measurements between percentile groups, distributed with reference to the average measurements—Boys. Based on data in Table VI, columns 1 and 2.

Case 1.—Wm. S.—Birthday, Aug. 16, 1883.

Date.		Age. Yrs.	Age. Mos.	Normal Age for Ht. Yrs.	Normal Age for Ht. Mos.	Normal Age for Wt. Yrs.	Normal Age for Wt. Mos.	Net. Ht. mm.	Wt. lbs.
'96-9-16	....	13	1	15	..	15	7	1580	113.0
12-14	....	13	5	..	..	17	1	....	127.3
'97-1-27	....	13	6	..	..	17	6	....	130.5
4-6	....	13	8	..	..	18	..	....	135.3
6-6	....	13	10	..	..	17	7	....	131.5
7-27	....	14	..	..	..	17	9	....	133.3
10-11	....	14	2	..	..	18	..	....	135.5
10-26	....	14	3	15	8	18	3	1621	137.1
11-24	....	14	4	..	..	18	7	....	140.0
12-9	....	14	4	..	..	18	6	....	139.8
12-24	....	14	5	..	..	*		....	142.3
'98-1-18	....	14	6	..	..	..	..	....	143.8
3-2	....	14	7	..	..	..	..	....	138.0
3-28	....	14	8	..	..	..	..	....	142.5
4-20	....	14	9	..	..	..	..	....	143.0
5-25	....	14	10	..	..	..	..	....	144.0

* Above highest normal average of tables.

Epileptic; excessive and rapid weight increase; unusual exertion always followed by convulsions.

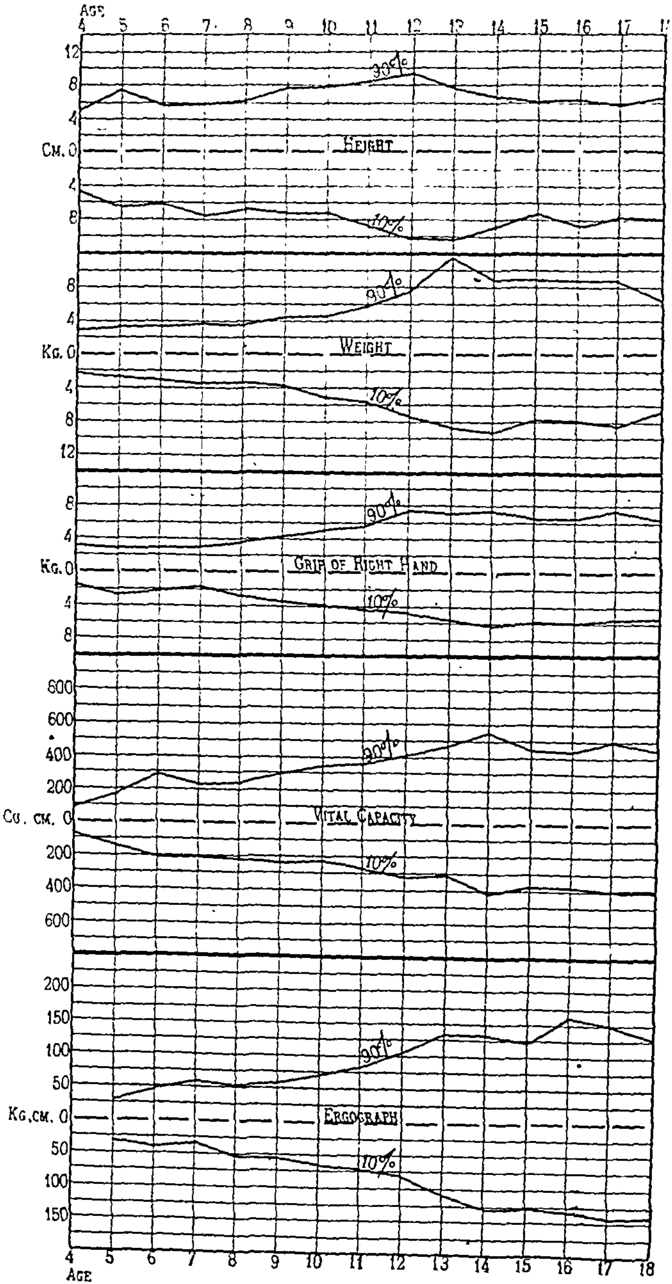

Chart 8.—Absolute range of measurements between percentile groups, distributed with reference to the average measurements—Girls. Based on data in Table VII, columns 1 and 2.

Case 2.—Marjorie P.—Birthday, March 5, 1891.

Date.		Age. Yrs.	Age. Mos.	Normal Age for Ht. Yrs.	Normal Age for Ht. Mos.	Normal Age for Wt. Yrs.	Normal Age for Wt. Mos.	Net. Ht. mm.	Wt. lbs.
00-12 22	....	9	10	12	9	12	2	1464	77.7
'01-2-2	....	9	11	13	1	12	6	1481	80.0
3-12	....	10	..	13	1	12	7	1483	81.9
4-20	....	10	2	13	1	12	7	1486	81.5
5-18	....	10	2	13	5	12	9	1506	83.3

Bad temper; cries easily; does not like to play; marked mental hebetude; stooped shoulders; perfect picture of fatigue. In four months' time height has increased 8 months, and weight has increased 7 months, and both were, when first seen, much above normal—height 35 months, and weight 28 months. A typical case of excessive growth and profound fatigue. Is improving.

CASE 3.—GRACE L.—BIRTHDAY, DEC. 9, 1888.

Date.	Age. Yrs.	Age. Mos.	Normal Age for Ht. Yrs.	Normal Age for Ht. Mos.	Normal Age for Wt. Yrs.	Normal Age for Wt. Mos.	Net. Ht. mm.	Wt. lbs.
'98-1-28	9	2	11	6	11	11	1385	75.0
4-11	9	4	..	..	12	..	....	75.5
'00-1-20	11	1	14	9	14	2	1565	101.5
2-24	11	2	14	6	14	6	1560	103.1
4-21	11	4	14	4	14	9	1557	105.5
5-15	11	5	14	4	14	5	1557	102.2
10-6	11	10	15	10	14	7	1580	104.1
'01-2-15	12	2	16	1	15	6	1585	108.8
4-25	12	5	18	8	15	8	1597	109.8

Fatigue; anorexia; stoop shoulders. From above table the following is formulated: In two months weight increased 1 month; fatigue and stoop. In 23 months height increased 39 months, weight increased 26 months; fatigue and stoop. In 9 months height increased 13 months, weight increased 5 months; fatigue and stoop. In 4 months height increased 3 months, weight increased 11 months; improvement: started to school. In 3 months height increased 27 months, weight increased 2 months; again fatigued.

CASE 4.—EDWIN L.—BIRTHDAY, APRIL 4, 1887.

Date.	Age. Yrs.	Age. Mos.	Normal Age for Ht. Yrs.	Normal Age for Ht. Mos.	Normal Age for Wt. Yrs.	Normal Age for Wt. Mos.	Net. Ht. mm.	Wt. lbs.
'97-1-4	9	9	11	9	9	9	1386	61.5
4-7	10	..	12	3	10	1	1405	63.5
'98-11-23	11	8	13	11	12	1	1514	75.5
'99-5-23	12	2	13	11	12	11	1511	82.8
8-12	12	4	14	10	12	10	1567	82.0
10-20	12	7	..	..	13	3	....	86.2
'00-2-19	12	11	..	..	13	11	....	93.0
6-25	13	3	16	5	14	2	1663	95.8
12-26	13	9	18	3	15	4	1723	109.8
'01-3-21	14	..	18	8	15	3	1743	109.2

Some fatigue; pulse rapid and irregular; heart area sl. increased; no valvular disease; rapid increase in stature; height and weight balance disturbed.

CASE 5.—BERTHA H.—BIRTHDAY, OCT. 6, 1888.

Date.	Age. Yrs.	Age. Mos.	Normal Age for Ht. Yrs.	Normal Age for Ht. Mos.	Normal Age for Wt. Yrs.	Normal Age for Wt. Mos.	Net. Ht. mm.	Wt. lbs.
'98-3-19	9	5	11	3	12	..	1370	75.5
7-12	9	9	11	7	11	10	1390	74.0
9-4	9	11	11	8	12	..	1395	75.5
10-22	10	1	12	1	12	6	1420	79.9
11-25	10	2	12	4	12	6	1432	80.4
'99-1-7	10	3	12	4	12	6	1435	80.0
8-9	10	10	12	8	12	9	1456	83.0
'00-1-2	11	3	13	1	13	8	1485	93.4
'01-4-20	12	6	15	..	14	5	1568	102.3

Excessive stoop, with slight lateral curvature later; rapid pulse; fatigue; rapid and excessive growth in height and weight, especially height; unbalanced measurements. Improved under rest, massage, and shoulder braces. Much of the last increase in height is due to greater erectness.

CASE 6.—JOHN K. M.—BIRTHDAY, JULY 1, 1886.

Date.	Age. Yrs.	Age. Mos.	Normal Age for Ht. Yrs.	Normal Age for Ht. Mos.	Normal Age for Wt. Yrs.	Normal Age for Wt. Mos.	Net. Ht. mm.	Wt. lbs.
'00-2-3	13	7	18	7	16	6	1740	121.8
3-10	13	8	..	..	16	2	1750	119.0
4-7	13	9	..	..	16	7	1756	123.3
6-12	13	11	..	..	16	1	1772	118.3
9-21	14	3	..	..	17	8	1796	132.0
'01-2-12	14	7	..	..	..	..	1818	142.3

Excessive height and weight, and unbalanced height and weight: shoulders badly stooped; pulse irregular. Improved under rest and shoulder braces. Hereditary tendency to great stature.

CASE 7.—ELSIE K.—BIRTHDAY, NOV. 10, 1884.

Date.	Age. Yrs.	Age. Mos.	Normal Age for Ht. Yrs.	Normal Age for Ht. Mos.	Normal Age for Wt. Yrs.	Normal Age for Wt. Mos.	Net. Ht. mm.	Wt. lbs.
'97-12-8	13	1	12	7	11	10	1449	74.3
12-23	13	1	..	..	12	..	....	75.4
'98-1-27	13	3	..	..	12	3	....	78.1
3-5	13	4	..	..	12	4	....	79.2
10-1	13	11	..	..	12	6	....	80.5
'00-9-29	15	11	*		14	4	1601	102.3
'01-2-5	16	3	*		..	..	1612	98.5

* Above highest normal.

Subnormal height and weight, with excessive school work; *fatigue. Taken from school, '97-12-8; returned* to school, '98-9-5, in excellent condition; '01-2-5, shows work of first year in high school is beginning to drag on her.

CASE 8.—DAVID I.—BIRTHDAY, MAY 4, 1887.

Date.	Age. Yrs.	Age. Mos.	Normal Age for Ht. Yrs.	Normal Age for Ht. Mos.	Normal Age for Wt. Yrs.	Normal Age for Wt. Mos.	Net. Ht. mm.	Wt. lbs.
'00-10-20	13	6	15	1	14	6	1587	99.3
12-22	13	8	15	4	15	..	1602	105.0
'01-5-4	14	..	15	11	15	4	1635	110.4

A magnificent fellow, height and weight above normal, but balanced, and not increasing beyond the capacity of his nutritive organs and heart. No functional disturbance of any kind. Prescribed golf, baseball, and tennis. Is the stuff of which good athletes are made.

The following conclusions are offered:

1. There is an exaltation of life processes at the pubertal period which finds its expression not only in an increased rate of growth, but also in the development of physical power. This exaltation is preceded by a period of relative quiescence. In the sexes this exaltation differs in that it commences earlier and has a shorter duration in girls than in boys; moreover, it is more marked in girls than in boys in weight and stature, but less in measurements involving physical power.

2. Puberty is also a *period of great individualization*, as indicated by the great normal range of physical measurements at this period.

3. The range of physical measurements at all ages in childhood, including puberty, is distributed uniformly above and below the line of average measurement.

4. At puberty mortality is low and morbidity is high.

5. Neuroses, psychoses, neurasthenias, cardiopathics, deformities and anemias are the principal morbid manifestations of the physical, intellectual and emotional turmoil which characterizes puberty.

6. The great range at puberty of the measurements of the physical features of the child expresses the condition which permits the existence in individual children of unusual lack of balance in physical measurements, or maladjustment of physical features.

7. Unbalanced physical development is an important factor in the production of morbid manifestations. It is operative throughout the developmental period of life. It occurs with greatest frequency at puberty, and it there finds its most marked expressions. It is found associated, in a causal relation, with most of the morbid manifestations of puberty, particularly disturbed heart action, dilatation of the heart, fatigue, anemia, and some deformities, such as round shoulders and scoliosis, as well as many of the neuroses of the period.

TABLE I. NORMS—BY AVERAGES.

BOYS.

AGE.	Number Examined.	Standing Height. Millimeters.	Sitting Height. Millimeters.	Weight with Clothing. Kilograms.	Work on Ergograph. Kg.-Cm.	Grip of Right Hand. Kilograms.	Grip of Left Hand. Kilograms.	Vital Capacity. Cubic Centimeters.
4-6-13	41	1012	583	16.984	......	5.50	5.08	736
5-7-14	70	1076	612	18.402	82.1	7.80	7.12	930
6-6- 6	227	1133	636	20.716	105.4	10.	9.32	1098
7-5-27	230	1183	658	22.535	139.2	11.50	10.91	1240
8-5-21	255	1234	677	25.022	168.2	13.27	12.40	1388
9-6- 4	228	1289	699	27.616	205.6	15.39	14.54	1549
10-6- 2	254	1330	713	29.837	235.	17.68	16.66	1659
11-5-17	228	1370	729	32.519	267.7	19.94	18.72	1799
12-5-23	256	1418	747	35.626	297.8	22.40	20.58	1956
13-5-14	230	1488	777	40.276	357.2	26.26	24.23	2246
14-5-20	250	1546	806	44.786	423.8	30.29	27.94	2527
15-5-25	205	1613	837	50.994	513.5	36.30	33.65	2858
16-5-15	146	1665	871	55.219	584.7	42.12	38.82	3363
17-5-18	92	1690	891	59.243	651.4	46.99	42.74	3570
18-4-27	40	1731	914	62.858	700.9	51.04	46.75	3701
19-4-18	23	1721	911	64.326	733.4	54.11	49.33	3872
20-5-12	8	1741	923	68.294	737.8	56.	48.50	3788
21-3-14	5	1704	911	63.955	727.4	52.	47.40	3770

GIRLS.

AGE.	Number Examined.	Standing Height. Millimeters.	Sitting Height. Millimeters.	Weight with Clothing. Kilograms.	Work on Ergograph. Kg.-Cm.	Grip of Right Hand. Kilograms.	Grip of Left Hand. Kilograms.	Vital Capacity. Cubic Centimeters.
4-7-10	36	1008	585	16.342	......	5.64	5.17	754
5-7- 2	81	1065	602	17.972	62.2	7.23	6.58	855
6-6- 8	204	1126	629	19.968	98.3	9.15	8.52	1008
7-6-15	236	1185	653	22.115	109.5	10.71	10.06	1121
8-6- 1	232	1228	674	23.995	142.5	11.67	10.96	1215
9-6- 7	221	1278	692	26.540	171.4	13.89	13.01	1360
10-5-15	240	1322	708	28.969	190.1	15.37	14.40	1456
11-5-16	223	1381	735	32.132	221.7	17.57	16.50	1587
12-5-15	247	1441	762	36.326	245.9	20.09	18.88	1729
13-6-13	255	1513	797	41.629	294.5	23.60	21.51	1924
14-6-13	301	1564	826	47.181	344.2	26.19	24.11	2117
15-6- 1	379	1574	840	49.345	356.5	27.92	25.81	2225
16-6- 0	354	1592	851	51.964	397.3	29.50	27.31	2306
17-5-10	251	1597	853	52.761	370.1	29.62	27.11	2304
18-4-25	137	1595	857	53.015	381.6	29.84	27.76	2351
19-5- 4	48	1599	855	54.600	416.8	31.21	28.85	2441
20-4-12	22	1588	848	54.033	363.3	29.96	27.45	2348
21-5- 8	4	1583	862	54.763	506.9	32.19	29.31	2250

Table II. BIRTHDAY NORMS.

BOYS.

Age.	Standing Height. Millimeters.	Sitting Height. Millimeters.	Weight with Clothing. Kilograms.	Work on Ergograph. Kg.-Cm.	Grip of Right Hand. Kilograms.	Grip of Left Hand. Kilograms.	Vital Capacity. Cubic Centimeters.
6-0	1106.9	624.0	19.738	92.86	9.21	8.48	1023
6-6	1132.5	635.4	20.675	104.79	9.97	9.29	1096
7-0	1158.2	646.7	21.613	122.12	10.74	10.11	1168
7-6	1183.9	657.8	22.550	139.45	11.51	10.92	1241
8-0	1209.3	667.5	23.817	154.17	12.41	11.67	1316
8-6	1234.8	677.2	25.083	168.89	13.31	12.43	1392
9-0	1261.4	687.9	26.336	187.07	14.34	13.47	1469
9-6	1288.0	698.5	27.589	205.24	15.37	14.51	1547
10-0	1309.1	705.6	28.707	220.03	16.52	15.59	1603
10-6	1330.3	712.6	29.825	234.82	17.67	16.66	1659
11-0	1351.1	721.0	31.223	251.86	18.85	17.72	1732
11-6	1371.9	729.3	32.619	268.89	20.03	18.80	1806
12-0	1395.4	738.0	34.151	283.83	21.24	19.71	1883
12-6	1418.9	747.0	35.684	298.75	22.45	20.62	1960
13-0	1455.4	762.4	38.084	329.21	24.44	22.51	2108
13-6	1490.9	777.9	40.485	359.69	26.43	24.40	2257
14-0	1519.2	792.1	42.696	392.62	28.42	26.22	2395
14-6	1547.4	806.4	44.908	425.55	30.40	28.04	2533
15-0	1580.7	821.8	47.993	470.13	33.39	30.88	2697
15-6	1614.1	836.8	51.078	514.72	36.38	33.73	2860
16-0	1640.3	854.3	53.238	551.22	39.37	36.39	3120
16-6	1666.5	871.7	55.398	587.73	42.35	39.04	3380
17-0	1678.5	881.6	57.384	620.64	44.74	40.96	3483
17-6	1690.4	891.4	59.371	653.53	47.14	42.87	3586
18-0	1712.3	903.0	61.288	679.73	49.28	45.01	3655
18-6	1734.1	914.6	63.204	705.82	51.43	47.16	3725

GIRLS.

Age.	Standing Height. Millimeters.	Sitting Height. Millimeters.	Weight with Clothing. Kilograms.	Work on Ergograph. Kg.-Cm.	Grip of Right Hand. Kilograms.	Grip of Left Hand. Kilograms.	Vital Capacity. Cubic Centimeters.
6-0	1096.6	617.2	18.870	87.79	8.36	7.74	950
6-6	1125.1	629.0	19.922	97.90	9.12	8.49	1006
7-0	1153.7	640.7	20.974	108.00	9.88	9.24	1061
7-6	1182.2	[illegible]	[illegible]	[illegible]	10.65	9.99	1117
8-0	1204.9	[illegible]	[illegible]	[illegible]	11.16	10.48	1165
8-6	1227.5	[illegible]	[illegible]	[illegible]	11.67	10.96	1214
9-0	1252.4	[illegible]	[illegible]	[illegible]	12.77	11.97	1286
9-6	1277.4	[illegible]	[illegible]	[illegible]	13.88	12.99	1358
10-0	1300.7	[illegible]	[illegible]	[illegible]	14.65	13.72	1409
10-6	1324.1	[illegible]	[illegible]	[illegible]	15.43	14.46	1460
11-0	1353.5	[illegible]	[illegible]	[illegible]	16.54	15.52	1526
11-6	1383.0	[illegible]	[illegible]	[illegible]	17.65	16.58	1592
12-0	1413.1	[illegible]	[illegible]	[illegible]	18.92	17.78	1664
12-6	1443.2	[illegible]	[illegible]	[illegible]	20.19	18.97	1736
13-0	1476.8	[illegible]	[illegible]	[illegible]	21.84	20.39	1827
13-6	1510.4	[illegible]	[illegible]	[illegible]	23.49	21.80	1918
14-0	1536.4	[illegible]	[illegible]	[illegible]	24.79	22.92	2014
14-6	1562.4	[illegible]	[illegible]	[illegible]	26.10	24.03	2111
15-0	1568.3	[illegible]	[illegible]	[illegible]	27.00	24.92	2168
15-6	1574.2	[illegible]	[illegible]	[illegible]	27.91	25.80	2225
16-0	1583.0	[illegible]	[illegible]	[illegible]	28.70	26.56	2266
16-6	1591.8	[illegible]	[illegible]	[illegible]	29.50	27.31	2306
17-0	1592.6	[illegible]	[illegible]	[illegible]	29.56	27.43	2319
17-6	1593.4	[illegible]	[illegible]	[illegible]	29.63	27.55	2331
18-0	1594.2	855.1	52.923	380.37	29.75	27.66	2343
18-6	1595.0	857.2	53.039	385.19	29.87	27.77	2355

Table III.

AVERAGE MONTHLY INCREMENT OF BIRTHDAY NORMS.

BOYS.

Age.	Standing Height. Millimeters.	Sitting Height. Millimeters.	Weight with Clothing. Kilograms.	Work on Ergograph Kilogram-Centimeters.	Grip of Right Hand. Kilograms.	Grip of Left Hand. Kilograms.	Vital Capacity. Cubic Centimeters.
6½ to 7½	4.3	1.8	.156	2.89	.13	.14	12
7½ to 8½	4.2	1.6	.211	2.45	.15	.13	13
8½ to 9½	4.4	1.7	.209	3.03	.17	.17	13
9½ to 10½	3.5	1.2	.187	2.46	.19	.18	9
10½ to 11½	3.5	1.4	.233	2.84	.19	.18	12
11½ to 12½	3.9	1.5	.256	2.50	.20	.15	13
12½ to 13½	6.1	2.6	.400	5.08	.33	.32	25
13½ to 14½	4.7	2.4	.368	5.49	.33	.30	23
14½ to 15½	5.6	2.5	.514	7.43	.50	.48	27
15½ to 16½	4.4	2.9	.360	6.08	.50	.44	43
16½ to 17½	2.6	1.6	.331	4.49	.40	.32	17
17½ to 18½	3.7	1.9	.320	4.34	.36	.36	11

GIRLS.

Age.	Standing Height. Millimeters.	Sitting Height. Millimeters.	Weight with Clothing. Kilograms.	Work on Ergograph Kilogram-Centimeters.	Grip of Right Hand. Kilograms.	Grip of Left Hand. Kilograms.	Vital Capacity. Cubic Centimeters.
6½ to 7½	4.7	2.0	.175	1.68	.12	.12	9
7½ to 8½	3.8	1.8	.164	2.02	.09	.08	8
8½ to 9½	4.2	1.5	.211	2.39	.18	.17	12
9½ to 10½	3.9	1.4	.213	1.65	.13	.12	8
10½ to 11½	4.9	2.3	.265	2.67	.18	.18	11
11½ to 12½	5.0	2.2	.353	2.00	.21	.20	12
12½ to 13½	5.6	2.7	.413	3.83	.28	.23	16
13½ to 14½	4.3	2.4	.461	4.21	.22	.19	16
14½ to 15½	1.0	1.3	.196	1.08	.15	.15	10
15½ to 16½	1.5	.9	.219	.80	.13	.12	7
16½ to 17½	.1	.2	.070	.80	.01	.02	2
17½ to 18½	.1	.3	.019	.80	.02	.02	2

Table IV. DISTRIBUTION INTO PERCENTILE GROUPS—Height.

BOYS.

Age	Minim. Cm.	10 Per Ct. Cm.	25 Per Ct. Cm:	75 Per Ct. Cm.	90 Per Ct. Cm.	Maxim. Cm.
4	86	96	98	104	107	116
5	96	103	104	110.5	113.5	118
6	101	107	110	116	119.5	125
7	103	112	115	121.5	124.5	132
8	109	116.5	120	127	130	138
9	107	121	125	133	136.5	146
10	116	125.5	129	137.5	141.5	147
11	121	129	133	141	145	159
12	125	132.5	137	146	150.5	164
13	131	140	143.5	154	159	168
14	130	143.5	148.5	160	167.5	178
15	132	151	155.5	166.5	171.5	179
16	142	155.5	161.5	172.5	175.5	185
17	137	160.5	165.5	174	178.5	182
18	161	166.5	168	177	181.5	183
19	148	163	165.5	178	184	197

GIRLS.

Age	Minim. Cm.	10 Per Ct. Cm.	25 Per Ct. Cm:	75 Per Ct. Cm.	90 Per Ct. Cm.	Maxim. Cm.
4	92	96	98	104	106	110
5	93	100	102	111	114	118
6	95	106.5	109.5	116	118.5	128
7	103	111	114.5	121.5	124.5	133
8	105	116	119	126.5	129	140
9	115	120.5	124	132	135.5	143
10	115	125	128.5	136	140	147
11	119	129.5	134	142.5	146.5	155
12	121	134	139	149	153.5	163
13	129	140.5	145	155	159	170
14	126	147.5	151.5	159.5	163	169
15	140	150	153	160	163.5	172
16	144	150.5	154.5	162	165.5	177
17	144	152	155	162	165.5	177
18	137	151.5	155	162.5	166	176
19	143	152	156	163	167	169

DISTRIBUTION INTO PERCENTILE GROUPS—Weight.

BOYS.

Age.	Minim. Kg.	10 Per Ct. Kg.	25 Per Ct. Kg.	75 Per Ct. Kg.	90 Per Ct. Kg.	Maxim. Kg.
4	12	14.75	15.5	18	20.25	21
5	13	16.25	17	19.5	21	26
6	15	18.5	19.5	22.25	23.75	27
7	17	20	21	24.5	25.75	32
8	17	21.75	23	26.5	28.75	62
9	20	23.5	25.25	29.5	32	38
10	19	25.75	27.5	31.75	34.5	50
11	23	27.25	29.5	35	37.75	49
12	25	29.5	32.25	38.25	42.25	54
13	28	33.5	36	43.5	48	72
14	29	35	39	49	55	68
15	30	40.5	45.5	56	61.5	97
16	34	46	50	59.5	65.5	105
17	34	47	54.5	65.5	69.5	81
18	45	54.5	57	66	71	83
19	47	52	57	69	74	98

GIRLS.

Age.	Minim. Kg.	10 Per Ct. Kg.	25 Per Ct. Kg.	75 Per Ct. Kg.	90 Per Ct. Kg.	Maxim. Kg.
4	12	14	15.5	17.5	19.25	21
5	13	15.25	16.5	19.25	21.25	23
6	13	17	18.25	21.5	23.25	27
7	15	18.50	20	23.5	26	31
8	17	20.5	22	25.5	27.5	35
9	19	22.75	24	28.5	31	41
10	19	24	26	31.25	33.5	50
11	21	26.5	29	34.75	38	50
12	21	29	31.75	40.5	44	69
13	24	33	36.5	46.5	52	69
14	28	38	42.5	51.75	56	74
15	30	41.5	44.5	53	58.25	81
16	33	44	47.5	56	60.75	91
17	38	44.5	48.25	56	61.5	75
18	35	46.25	49	56.5	59.5	80
19	38	49.5	51	57	62.5	88
20	30	46	48.5	59.5	66	71

DISTRIBUTION INTO PERCENTILE GROUPS—Right Hand Grip.

BOYS.

Age	Minim. Kg.	10 Per Ct. Kg.	25 Per Ct. Kg.	75 Per Ct. Kg.	90 Per Ct. Kg.	Maxim. Kg.
4	3	3.25	4	7.25	9	10.50
5	4	5.25	6	9.75	10.25	12
6	7	8.50	9.25	11.50	12.50	16
7	5	9.25	10.25	13.25	14.50	27
8	6	10	11.25	15.25	17.50	24
9	8	11.25	13.25	18.25	20.50	30
10	10	13.25	15.25	20.50	22.75	33
11	11	15.50	17.50	23	25.50	31
12	11	17.25	20	26	29	37
13	17	20.25	22.25	30.50	34.25	62
14	15	22	25	35.75	40.75	51
15	19.50	27	30.25	42	47.50	56
16	21	32.5	36.50	47.50	51.5	75
17	20	39	42	53.50	59	72
18	36	43.50	46.25	58	63	71
19	43	46.50	48	62	68	77
20	40	51	52	57.50	59	59

GIRLS.

Age	Minim. Kg.	10 Per Ct. Kg.	25 Per Ct. Kg.	75 Per Ct. Kg.	90 Per Ct. Kg.	Maxim. Kg.
4	3	4	4.50	7	8.75	9
5	3	4.50	5.50	8.25	10	12
6	4	7	8.50	10.50	12	14
7	5	9	10	12.25	13.75	16
8	6	9	10.25	13.50	15.25	18
9	8	10.50	12.25	15.75	18.25	24
10	9	11.50	13	18	20.50	32
11	8	13.25	15.25	20.50	23	27
12	10	15.25	17.50	23.50	27.50	35

TABLE IV—(Continued).

DISTRIBUTION INTO PERCENTILE GROUPS—Right Hand Grip.

GIRLS—(Continued).

13	11	18	20.25	27.50	30.75	45
14	14.50	20	22.50	31	33.50	38
15	16.50	22	25	31.50	34.50	47
16	18	23.50	26.50	32.50	36	48
17	18	24	26.50	33	37	45
18	22	24.50	27	32.50	36.25	46
19	20	25	27.50	33.50	36.50	39
20	21	26	28.50	34	35.50	36

DISTRIBUTION INTO PERCENTILE GROUPS—Vital Capacity.

BOYS.

AGE.	Minim. Cu. cm.	10 Per Ct. Cu. cm.	25 Per Ct. Cu. cm.	75 Per Ct. Cu. cm.	90 Per Ct. Cu. cm.	Maxim. Cu. cm.
4	500	625	675	825	950	1050
5	500	775	850	1025	1150	1250
6	700	925	1000	1225	1325	1600
7	700	1025	1150	1375	1475	1800
8	800	1150	1250	1575	1750	2100
9	950	1300	1400	1750	1925	2200
10	900	1350	1450	1850	2050	2700
11	1100	1475	1600	2025	2200	3000
12	1150	1575	1750	2200	2400	3100
13	1600	1850	2000	2450	2800	4200
14	1100	1900	2175	2900	3350	4000
15	1400	2250	2450	3300	3575	4500
16	2000	2550	2950	3800	4300	5100
17	1800	2900	3200	4000	4350	5000
18	2400	3225	3425	4175	4700	5000
19	3000	3100	3500	4200	4800	5600
20	2200	2100	3300	4600	5000	5100

GIRLS.

AGE.	Minim. Cu. cm.	10 Per Ct. Cu. cm.	25 Per Ct. Cu. cm.	75 Per Ct. Cu. cm.	90 Per Ct. Cu. cm.	Maxim. Cu. cm.
4	600	675	725	825	850	900
5	600	725	800	975	1025	1100
6	600	800	900	1175	1300	1400
7	750	925	1000	1250	1350	1600
8	700	1000	1125	1350	1450	1800
9	900	1125	1225	1500	1650	2100
10	900	1225	1325	1600	1800	2100
11	1000	1325	1450	1800	1950	2300
12	800	1400	1550	1975	2150	3000
13	1100	1600	1750	2175	2400	3000
14	1350	1700	1925	2350	2675	3100
15	1450	1850	2000	2450	2675	3400
16	1350	1925	2100	2550	2750	3600
17	1250	1900	2075	2550	2800	3300
18	1500	1950	2150	2600	2800	3600
19	1700	2000	2200	2700	3000	3300
20	1300	1900	2200	2700	2825	2900

DISTRIBUTION INTO PERCENTILE GROUPS—Ergograph.

BOYS.

AGE.	Minim. Kg.-cm.	10 Per Ct. Kg.-cm.	25 Per Ct. Kg.-cm.	75 Per Ct. Kg.-cm.	90 Per Ct. Kg.-cm.	Maxim. Kg.-cm.
5	50	52.5	55	100	130	150
6	30	62.5	77.5	127.5	150	230
7	40	92.50	115	165	190	280
8	40	110	135	200	227.5	300
9	50	140	167.5	242.5	287.5	390
10	110	162.5	190	272.5	315	520
11	110	190	222.5	295	365	490
12	100	202.5	242.5	347.5	402.5	580
13	130	230	285	405	490	880
14	160	265	332.5	510	585	880
15	150	320	390	615	745	1040
16	260	410	470	680	800	1320
17	230	440	545	770	855	1110
18	380	560	600	790	905	1010
19	390	520	610	850	1040	1140

GIRLS.

AGE.	Minim. Kg.-cm.	10 Per Ct. Kg.-cm.	25 Per Ct. Kg.-cm.	75 Per Ct. Kg.-cm.	90 Per Ct. Kg.-cm.	Maxim. Kg.-cm.
5	20	30	45	70	90	100
6	30	60	75	117.5	142.5	200
7	40	75	95	145	170	280
8	30	90	112	170	195	280
9	50	115	137.5	202.5	230	430
10	40	125	155	225	260	600
11	70	150	175	260	305	390
12	70	165	195	285	350	650
13	80	185	225	355	430	570
14	90	215	227.5	405	480	660
15	100	230	290	415	480	690
16	120	232.5	305	442.5	530	840
17	150	230	292.5	430	520	640
18	130	240	300	450	510	820
19	160	270	340	480	575	870

TABLE V.

ANNUAL RATE OF INCREASE—BOYS.

Age.	Height at Beginning of Year. mm.	Amount of Gain. mm.	Per Cent. of Gain.
6 to 7	1106.9	51.3	4.63
7 to 8	1158.2	51.1	4.40
8 to 9	1209.3	52.1	4.30
9 to 10	1261.4	47.7	3.77
10 to 11	1309.1	42.0	3.20
11 to 12	1351.1	44.3	3.27
12 to 13	1395.4	60.0	4.29
13 to 14	1455.4	63.8	4.39
14 to 15	1519.2	61.5	4.04
15 to 16	1580.7	59.6	3.70
16 to 17	1640.3	38.2	2.32
17 to 18	1678.5	33.8	2.01

TABLE V—(Continued).

ANNUAL RATE OF INCREASE—BOYS.

Age.	Height Sitting at Beginning of Year. mm.	Amount of Gain. mm.	Per Cent. of Gain.
6 to 7	624.0	22.7	3.64
7 to 8	646.7	20.8	3.21
8 to 9	667.5	20.4	3.05
9 to 10	687.9	17.7	2.57
10 to 11	705.6	15.4	2.18
11 to 12	721.0	17.0	2.35
12 to 13	738.0	24.4	3.30
13 to 14	762.4	29.7	3.89
14 to 15	792.1	29.7	3.74
15 to 16	821.8	32.5	3.95
16 to 17	854.3	27.3	3.19
17 to 18	881.6	21.4	2.41

Age.	Weight at Beginning of Year. Kg.	Amount of Gain. Kg.	Per Cent. of Gain.
6 to 7	19.738	1.875	9.50
7 to 8	21.613	2.204	10.20
8 to 9	23.817	2.519	10.57
9 to 10	26.336	2.371	9.00
10 to 11	28.707	2.516	8.76
11 to 12	31.223	2.928	9.37
12 to 13	34.151	3.933	11.51
13 to 14	38.084	4.612	12.11
14 to 15	42.696	5.297	12.40
15 to 16	47.993	5.245	10.92
16 to 17	53.238	4.146	7.78
17 to 18	57.384	3.904	6.80

Age.	Ergograph at Beginning of Year. Kg.-cm.	Amount of Gain. Kg.-cm.	Per Cent. of Gain.
6 to 7	87.47	34.65	39.62
7 to 8	122.12	32.05	26.24
8 to 9	154.17	32.90	21.34
9 to 10	187.07	32.96	17.56
10 to 11	220.03	31.83	14.46
11 to 12	251.86	31.97	12.68
12 to 13	283.83	45.38	15.98
13 to 14	329.21	63.41	19.29
14 to 15	392.62	77.51	19.74
15 to 16	470.13	81.09	17.23
16 to 17	551.22	69.42	12.59
17 to 18	620.64	59.09	9.52

Age.	Right Hand Grip at Beginning of Year. Kg.	Amount of Gain. Kg.	Per Cent. of Gain.
6 to 7	9.21	1.53	16.61
7 to 8	10.74	1.67	15.55
8 to 9	12.41	1.93	15.55
9 to 10	14.34	2.18	15.20
10 to 11	16.52	2.33	14.10
11 to 12	18.85	2.39	12.67
12 to 13	21.24	3.20	15.06
13 to 14	24.44	3.98	16.28
14 to 15	28.42	4.97	17.44
15 to 16	33.39	5.98	17.90
16 to 17	39.37	5.37	13.38
17 to 18	44.14	4.54	10.14

Age.	Left Hand Grip at Beginning of Year. Kg.	Amount of Gain. Kg.	Per Cent. of Gain.
6 to 7	8.48	1.63	19.22
7 to 8	10.11	1.56	15.43
8 to 9	11.67	1.80	15.42
9 to 10	13.47	2.12	15.73
10 to 11	15.59	2.13	13.66
11 to 12	17.72	1.99	11.23
12 to 13	19.71	2.80	14.20
13 to 14	22.51	3.71	12.03
14 to 15	26.22	4.66	17.77
15 to 16	30.88	5.51	17.84
16 to 17	36.39	4.57	12.55
17 to 18	40.96	4.05	9.88

Age.	Vital Capacity at Beginning of Year. Cu. cm.	Amount of Gain. Cu. cm.	Per Cent. of Gain.
6 to 7	1023	145	14.17
7 to 8	1168	148	12.67
8 to 9	1316	153	11.62
9 to 10	1469	134	9.12
10 to 11	1603	129	8.04
11 to 12	1732	151	8.71
12 to 13	1883	225	11.95
13 to 14	2108	287	13.61
14 to 15	2395	302	12.60
15 to 16	2697	423	15.68
16 to 17	3120	363	11.63
17 to 18	3483	172	4.93

ANNUAL RATE OF INCREASE—GIRLS.

Age.	Height at Beginning of Year. mm.	Actual Gain. mm.	Per Cent. of Gain.
6 to 7	1096.6	57.1	5.20
7 to 8	1153.7	51.2	4.44
8 to 9	1204.9	47.5	3.94
9 to 10	1252.4	48.3	3.86

Table V—(Continued).

ANNUAL RATE OF INCREASE—GIRLS.

Age.	Height at Beginning of Year. mm.	Actual Gain. mm.	Per Cent. of Gain.
10 to 11	1300.7	52.8	4.06
11 to 12	1353.5	59.6	4.40
12 to 13	1413.1	63.7	4.51
13 to 14	1476.8	59.6	4.04
14 to 15	1536.4	31.9	2.08
15 to 16	1568.3	14.7	0.94
16 to 17	1583.0	9.6	0.61
17 to 18	1592.6	1.6	0.10

Age.	Height Sitting at Beginning of Year. mm.	Actual Gain. mm.	Per Cent. of Gain.
6 to 7	617.0	23.7	3.84
7 to 8	640.7	22.7	3.54
8 to 9	663.4	19.8	2.98
9 to 10	683.2	17.3	2.53
10 to 11	700.5	21.8	3.11
11 to 12	722.3	27.0	3.74
12 to 13	749.3	29.8	3.98
13 to 14	779.1	30.8	3.95
14 to 15	809.9	22.2	2.74
15 to 16	832.1	13.3	1.60
16 to 17	845.4	6.6	0.78
17 to 18	852.0	3.1	0.36

Age.	Weight at Beginning of Year. Kg.	Actual Gain. Kg.	Per Cent. of Gain.
6 to 7	18.870	2.104	11.15
7 to 8	20.974	2.036	9.71
8 to 9	23.010	2.247	9.77
9 to 10	25.257	2.538	10.05
10 to 11	27.795	2.867	10.31
11 to 12	30.662	3.711	12.10
12 to 13	34.373	4.601	13.38
13 to 14	38.974	5.245	13.46
14 to 15	44.219	3.942	8.91
15 to 16	48.161	2.491	5.17
16 to 17	50.652	1.734	3.42
17 to 18	52.386	0.537	1.03

Age.	Ergograph at Beginning of Year. Kg.-cm.	Actual Gain. Kg.-cm.	Per Cent. of Gain.
6 to 7	87.79	20.21	23.02
7 to 8	108.00	22.24	20.59
8 to 9	130.24	26.49	20.34
9 to 10	156.73	24.25	15.47
10 to 11	180.98	25.92	14.32
11 to 12	206.90	28.02	13.55
12 to 13	234.92	34.97	14.89
13 to 14	269.89	48.23	17.87
14 to 15	318.12	31.71	9.97
15 to 16	349.83	11.27	3.22
16 to 17	361.10	9.64	2.67
17 to 18	370.74	9.63	2.60

Age.	Right Hand Grip at Beginning of Year. Kg.	Amount of Gain. Kg.	Per Cent. of Gain.
6 to 7	8.36	1.52	18.18
7 to 8	9.88	1.28	12.90
8 to 9	11.16	1.61	14.43
9 to 10	12.77	1.78	13.94
10 to 11	14.65	1.89	12.95
11 to 12	16.54	2.38	14.39
12 to 13	18.92	2.92	15.43
13 to 14	21.84	2.95	13.52
14 to 15	24.79	2.21	8.91
15 to 16	27.00	1.70	6.30
16 to 17	28.70	0.86	3.00
17 to 18	29.56	0.19	0.60

Age.	Left Hand Grip at Beginning of Year. Kg.	Amount of Gain. Kg.	Per Cent. of Gain.
6 to 7	7.74	1.50	19.37
7 to 8	9.24	1.24	13.42
8 to 9	10.48	1.49	14.21
9 to 10	11.97	1.75	14.62
10 to 11	13.72	1.80	13.11
11 to 12	15.52	2.26	14.56
12 to 13	17.78	2.61	14.66
13 to 14	20.39	2.53	12.40
14 to 15	22.92	2.00	8.72
15 to 16	24.92	1.64	6.58
16 to 17	26.56	0.87	3.27
17 to 18	27.43	0.23	0.85

Age.	Vital Capacity at Beginning of Year. Cu. cm.	Amount of Gain. Cu. cm.	Per Cent. of Gain.
6 to 7	950	111	11.68
7 to 8	1061	104	9.80
8 to 9	1165	121	10.39
9 to 10	1286	123	9.56
10 to 11	1409	117	8.30
11 to 12	1526	138	9.04
12 to 13	1664	163	9.79
13 to 14	1827	187	10.24
14 to 15	2014	154	7.64
15 to 16	2168	98	4.52
16 to 17	2266	53	2.34
17 to 18	2319	24	1.03

Table VI.

ABSOLUTE RANGE OF MEASUREMENTS BETWEEN PERCENTILE GROUPS.—BOYS.

Age.	Height. Cm.				Weight. Kg.			
	10 per cent. to average.	Average to 90 per cent.	10 to 90 per cent.	25 to 75 per cent.	10 per cent. to average.	Average to 90 per cent.	10 to 90 per cent.	25 to 75 per cent.
4	5.2	5 8	11.0	6 0	2.23	3.27	5.50	2.50
5	4.6	5 9	10.5	6.5	2.15	2.60	4.75	2.50
6	6.3	6 2	12.5	6.0	2.22	3 03	5.25	2.75
7	6 3	6 2	12.5	6.5	2.53	3 22	5.75	3.50
8	6.9	6.6	13.5	7.0	3 27	3.73	7.00	3 50
9	7 9	7 6	15.5	8.0	4.12	4.38	8.50	4.25
10	7 5	8.5	16.0	8.5	4.09	4.66	8 75	4.25
11	8.0	8 0	16.0	8.5	5.27	5 23	10 50	5.50
12	9.3	8.7	18 0	9 0	6 13	6 62	12.75	6.00
13	8.8	10.2	19.0	10.5	6.78	7.72	14 50	7.50
14	11 1	12.9	24.0	11.5	9.79	10.21	20.00	10.00
15	10 3	10.2	20 5	11 0	10 49	10 51	21 00	10.50
16	11.0	9.0	20.0	11.0	9.22	10 28	19.50	9.50
17	8.5	9.5	18 0	8 5	12 24	10 26	22.50	11.00
18	7.1	8 4	15.0	9.0	8 36	8 14	16.50	9.00

Table VI.—(Continued.)

ABSOLUTE RANGE OF MEASUREMENTS BETWEEN PERCENTILE GROUPS.—BOYS.

Age.	Grip of right hand. Kg.				Vital capacity. Cc.			
	10 per cent. to average.	Average to 90 per cent.	10 to 90 per cent.	25 to 75 per cent.	10 per cent. to average	Average to 90 per cent.	10 to 90 per cent.	25 to 75 per cent.
4	2 25	3 50	5.75	3.25	111	214	325	150
5	2 55	2.45	5.00	3.75	155	220	375	175
6	1.50	2.50	4 00	2 25	173	227	400	225
7	2.25	3 00	5 25	3 00	215	235	450	225
8	3.27	4.23	7 50	4 00	238	362	600	325
9	4.14	5.11	9.25	5.00	249	376	625	350
10	4.43	5 07	9 50	5.25	309	391	700	400
11	4 44	5.56	10 00	5 50	324	401	725	425
12	5.15	6 60	11.75	6.00	381	444	825	450
13	6.01	7 99	14.00	8 25	396	554	950	450
14	8.29	10.46	18.75	10.75	627	823	1450	725
15	9 30	11.20	20 50	11.75	608	717	1325	850
16	9.62	9.38	19 00	11.00	813	937	1750	850
17	7.99	12.01	20 00	11 50	670	780	1450	800
18	7.54	11.96	19.50	11 75	476	999	1475	750

Table VI.—(Continued.)

ABSOLUTE RANGE OF MEASUREMENTS BETWEEN PERCENTILE GROUPS.—BOYS.

Age.	Endurance as measured by ergograph. Kg. cm.			
	10 per cent. to average.	Average to 90 per cent.	10 to 90 per cent.	25 to 75 per cent.
4		...	.	...
5	29.6	47.9	77.5	45.0
6	42 9	44.6	87.5	50.0
7	46 7	50.8	97.5	50 0
8	58 2	59.3	117 5	65 0
9	65.6	81 9	147.5	75 0
10	72.5	80 0	152 5	82.5
11	77.7	97 3	175.0	82.5
12	95 3	104.7	200.0	105.0
13	127 2	132 8	260.0	120.0
14	158.8	161.2	320.0	177.5
15	193 5	231.5	425.0	225.0
16	174.7	215 3	390.0	210 0
17	201.4	203 6	405 0	225.0
18	140.9	204 1	345 0	190 0

Table VII.

ABSOLUTE RANGE OF MEASUREMENTS BETWEEN PERCENTILE GROUPS.—GIRLS.

Age.	Height. Cm.				Weight. Kg.			
	10 per cent. to average.	Average to 90 per cent.	10 to 90 per cent.	25 to 75 per cent.	10 per cent. to average.	Average to 90 per cent.	10 to 90 per cent.	25 to 75 per cent.
4	4.8	5 2	10.0	6.0	2.34	2.91	5.25	2.00
5	6.5	7.5	14.0	9 0	2.72	3.28	6.00	2.75
6	6.1	5.9	12.0	6.5	2.97	3.28	6.25	3.25
7	7.5	6 0	13.5	7.0	3.62	3.88	7.50	3.50
8	6.8	6.2	13.0	7 5	3.49	3.51	7.00	3.50
9	7.3	7.7	15.0	8.0	3.79	4.46	8.25	4.50
10	7.2	7.8	15.0	7.5	4 97	4.53	9 50	5.25
11	8.6	8.4	17.0	8.5	5.63	5.87	11.50	5.75

Table VII—(Continued).

12	10.1	9 4	19.5	10.0	7.33	7.67	15.00	8.75
13	10 8	7.7	18.5	10.0	8.63	11 37	19.00	10.00
14	8.9	6.6	15.5	8.0	9 18	8 82	18.00	9 25
15	7 4	6 1	13.5	7.0	7 84	8 91	16.75	8.50
16	8.7	6.3	15.0	7.5	7.96	8.79	16 75	8.50
17	7.7	5 8	13.5	·7 0	8.26	8 74	17 00	7.75
18	8.0	6.5	14.5	7.5	6.77	6.48	13 25	7.50

Table VII.—(Continued.)

ABSOLUTE RANGE OF MEASUREMENTS BETWEEN PERCENTILE GROUPS.—GIRLS.

Age.	Grip of right hand. Kg.				Vital capacity. Cc.			
	10 per cent. to average.	Average to 90 per cent.	10 to 90 per cent.	25 to 75 per cent.	10 per cent. to average.	Average to 90 per cent.	10 to 90 per cent.	25 to 75 per cent.
4	1.64	3 11	4.75	2.50	79	96	175	100
5	2.73	2 77	5.50	2.75	130	170	300	175
6	2.15	2.85	5.00	2.00	208	292	500	275
7	1 71	3.04	4.75	2.25	196	229	425	250
8	2.67	3 58	6.25	3.25	215	235	450	225
9	3.39	4 36	7.75	3.50	235	290	525	275
10	3.87	5.13	9.00	5 00	231	344	575	275
11	4.32	5.43	9.75	5.25	262	363	625	350
12	4 84	7.41	12 25	6 00	329	421	750	425
13	5.60	7.15	12.75	7.25	324	476	800	425
14	6.19	7.31	13.50	8.50	417	558	975	425
15	5 92	6.58	12 50	6.50	375	450	825	450
16	6.00	6.50	12.50	6 00	381	444	825	450
17	5.62	7.38	13 00	6.50	404	496	900	475
18	5.34	6.41	11.75	5.50	401	449	850	450

Table VII.—(Continued.)

ABSOLUTE RANGE OF MEASUREMENTS BETWEEN PERCENTILE GROUPS.—GIRLS.

Age.	Endurance as measured by ergograph. Kg. cm.			
	10 per cent to average.	Average to 90 per cent.	10 to 90 per cent.	25 to 75 per cent.
4	. . .			. . .
5	32.2	27.8	60.0	25.0
6	38 3	44 2	82.5	42.5
7	34 5	60 5	95.0	50 0
8	52.5	52.5	105.0	58.0
9	56.4	58.6	115.0	65 0
10	65.1	69.9	135.0	70.0
11	71.7	83.3	155.0	85 0
12	80 9	104.1	185.0	90.0
13	109.5	135.5	245 0	130.0
14	129.2	135 8	265.0	177.5
15	126.5	123.5	250.0	125.0
16	134.8	162.7	297.5	137.5
17	140.1	149.9	290 0	137.5
18	141.6	128.4	270.0	150.0

Clinical Reports.

REDUCTION OF DISLOCATION OF THE SHOULDER BY CONTINUOUS TRACTION.

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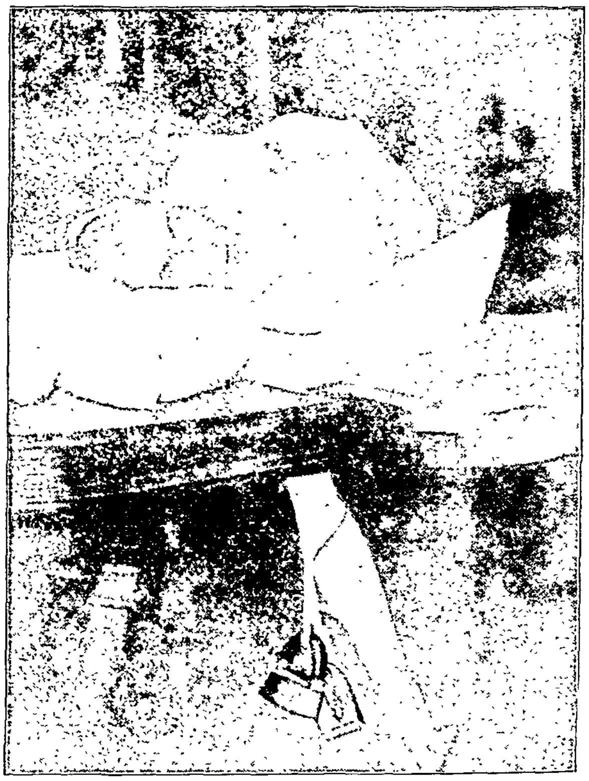
Dr. L. A. Stimson[1] described a method of reducing recent shoulder and hip dislocations, which he used with very gratifying results. His method appealed to me as being scientific and practical; hence, I have made use of the principle in all recent cases of dislocation of those parts coming under my care since his article was published. The results were so satisfactory that I feel justified in noting them.

The principle on which reduction of dislocations of the shoulder by continuous traction depends, is that the muscles are relaxed and rendered passive, thus offering no resistance to the movements of the humerus. There remains, then, only the ligaments and the atmospheric pressure to prevent reduction. The ligaments of the shoulder are so arranged that they offer no resistance to it and the looseness of the capsule is so great that the arm will fall about an inch from the scapula when the muscles are dissected from the capsular ligament and an opening is made in it to remove the atmospheric pressure. From the foregoing, it is evident that when the resistance offered by the muscles and by the atmospheric pressure is overcome, which is done by the slow, continuous traction on the arm, the capsular ligament allows the articular surfaces of the scapula and head of the humerus to be separated to such an extent that they become placed opposite each other, and when the traction is removed they return to their proper places—reduction having been accomplished.

Technique of Reducing the Dislocation.—The method of reducing the dislocation, as recommended by Stimson, is as follows: Place the dislocated arm through a 6-inch hole, made 18 inches from one end, in a canvas stretcher, the patient lying on the stretcher in a lateral position; a ten-pound weight is then attached to his wrist. In all cases tried, reduction was completed in six minutes.

Hofmeister applied the same principle and obtained equally good results, by using a complicated set of pulleys. In my first cases, the following method was used: The patient was placed on an ordinary dining table, in the lateral position; the dislocated arm allowed to hang through an opening made by removing one of the leaves; the patient supported by pillows and blankets, and the necessary number of flatirons attached to the wrist or elbow. In six cases treated by this method, reduction was accomplished at the end of six minutes in each of them. In some of the cases, at least, the reduction appeared to be effected in a shorter period; but this was not proven, as each time the weight was attached for the six minutes.



It occurred to me that carefully applied muscular force could be substituted for the weights, and, therefore, in treating the next dislocation of the shoulder, I pulled gently and steadily on the arm, held at right angles to the body, the patient relaxing his muscles. This he did, willingly, for he found that the traction was painless. After I had pulled gently and continuously for about two minutes, I felt the arm twist slightly, and, on relaxing my hold, found the dislocation reduced. I have tried this method in 7 cases and have succeeded in reducing the dislocations in all of them. In no case was I obliged to apply the traction longer than four minutes, and in most instances, a shorter period was sufficient.

The advisability of employing this method of reducing shoulder dislocation may be considered from two standpoints.

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[1] An Easy Method of Reducing Dislocations of the Shoulder and Hip, N. Y. Med. Rec., March 3, 1900.

It offers the following advantages: 1, It has not failed to reduce a dislocation in any case. Stimson tried it on 10 cases, and I have reduced 13 cases; 6 by the use of weights and 7 by substituting muscular force for them; 2, in no case has the patient complained of the reduction being painful; 3, there has been no evidence of injury to the soft parts in this method of treatment, and it is difficult to understand how such could occur when so little force is used; 4, anesthesia is unnecessary, and 5, I have succeeded in reducing dislocations by this method where other methods have failed.

The disadvantages are, thus far in my experience, none. Of course, it is possible that some cases of shoulder dislocations can not be reduced by the method, but I have not found them. Traction on the arm, at right angles to the body, is advised against by most writers, on account of the danger of injuring the vessels and nerves. I do not think the objection holds in cases where such mild traction is used as is advised in the method of treatment outlined in the foregoing. I can see no reason why the method should not be tried in reducing shoulder dislocations, and judging from the results I have obtained, though the cases are few in number, *it is the best method for treating recent cases.*

BABE WITH ONE LUNG.

RALPH HANSON, M.D.

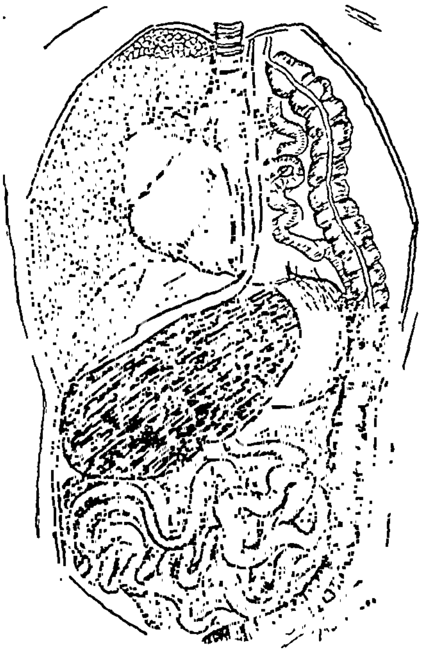
LEWISTOWN, ILL.

Mrs. W. G. M. was delivered after a normal labor of a seven-pound female child on October 27, 1900, at about the thirty-sixth week of gestation. It breathed immediately, but not satisfactorily, the respirations being shallow and at too long intervals. There was no cry; the color was pale. The pulse in the cord was strong so the child was removed from the mother, and all usual efforts made to establish normal respiration, but without success. The respirations became less frequent and more shallow and ceased entirely in about fifteen minutes. The heart continued beating for several minutes longer.

In working with the child the heart-beat was discovered to be on the right side and was easily felt, and the impulse was visible to both myself and the nurse. I thought I had a case of transposition of the viscera, and asked for permission to hold a postmortem examination, which was granted.

On opening the chest the heart was found on the right side, just to the right of the sternum and base under right nipple. The right lung was normal in shape, but rather smaller than usual. The left lung was rudimentary in the extreme and looked like a bunch of millet seed not longer than a buckshot, the bronchus being simply a cord about one-twelfth of an inch in length. The diaphragm was normal on the right side, but was only a small band of muscular fibers about one-eighth of an inch in width along the border of the ribs. There was nothing on the posterior wall to indicate where it should have been, this wall being perfectly smooth from apex to pelvis.

The liver and stomach were normal in size and position. The small intestines were as usual, except the lower portion turned to the left and ascended behind the stomach *into the left chest* cavity at the apex of which it entered the cecum. The vermiform appendix lay in the apex against the clavicle. The colon passed directly down from this point to the sigmoid flexure. The pelvic organs were normal.



History of the Clinical Thermometer.—*Janus* quotes from Daniels' history of the thermometer at the sick bed, recently published in the *Tijdschr. v. Geneesk*, that Currie, of Edinburgh, employed a thermometer in treating typhoid patients with the cold douche, as early as 1797. His example was not followed by others, and he was even held up to ridicule by his German contemporaries as an "instance of the sad condition into which English medicine has fallen." To Sanctorius of Padua, professor of medicine and author of the famous book "De Statica Medica," belongs the first clinical application of the thermometer. He invented a kind of air-thermometer, open at one end. After being held by the patient the attached tube was plunged into cold water and the height of the column of water was recorded. The great Dutch physician Boerhaave taught the importance of the temperature in disease, and used the thermometer. Van Swieten, one of his pupils, recommended Fahrenheit's thermometer for the purpose, but to another pupil, De Haen—1704 to 1776—is due the honor of having introduced the thermometer into current use at the bedside. It was not till 1835 that thermometry began to make real progress, and not till 1850 to 1870 that it came into general use, mostly due to Traube and Wunderlich's studies on temperature in disease.

Hygienic Advantages of Evening Dress.—An eminent English physician states that the evening dress suit is a distinct hygienic gain. It compels the changing of the clothes, the æration of the body. The wearer feels obliged to stand more erect, to throw out his chest and thus breathe deeper. In short, he contends that a change from the business to the dress suit every evening will add years to one's life.

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THE ATTEMPTED MURDER OF THE PRESIDENT.

Our country has been called again to bow in sorrow and, at the same time, in humiliation. In sorrow, because an honest, laborious, well-meaning patriotic public servant has been murderously assaulted while doing his duty, and this without any cause whatsoever. In humiliation, because here, in this land of free speech, of free press, and of democratic government, where the poorest has as much to say who shall be ruler as the most wealthy; here, where the ruler is as a brother to the poorest citizen, where despotism is unknown and liberty in its broadest sense is the heritage and the right of all; here the anarchistic assassin plies his accursed work and excuses his deed by calling it a righteous one.

With feelings of sorrow and abhorrence, mingled with rage, the American people have again stood in the presence of their chief magistrate lying prostrate from a bullet sent by the hand of a being in the form of a man, but who, thank God, bears a name that can not be mistaken for that of an American.

Murder most wanton, murder most foul, murder absolutely unprovoked, yet deliberate, predetermined, and carried out with the tactics of a snake, was attempted. And why? Because William McKinley stood for law and order; because he was the representative of the government. There was no other reason, not even an imaginary one.

Shall we say that Leon Czolgosz is a degenerate? If by this is meant that he is worse than his fellows, yes. If by this is meant that he is so constituted by birth or development that he is physically abnormal and therefore not responsible, no. This idea of calling degenerates all those whose views of affairs become perverted by association with those who glory in pulling down everything that exists because it does exist, by reading only firebrandish literature of anarchism, and by devoting their time to concocting arguments against the fundamental principles of law and order and good government, is absurd. No, Czolgosz is an anarchist, that is all.

So let us leave him and turn to the other side. President McKinley is living to-day, thanks to the skill of the surgeons. This prospect of a fortunate result in this case of national and world-wide interest is due to the prompt surgical intervention and the application of the best technique and surgical science of to-day. But for these, the anarchist's bullet would have been successful or a practical miracle would have had to have occurred. Those who were called on to save the President deserve all the praise and honor that will be theirs for having proved themselves equal to the occasion.

Surgeons are being called on daily to do more delicate and more difficult operations than was this on the President, but in a patient so illustrious, it required courage in any one who should attempt it. A critical world watched, and the hopes of a nation were centered on this operation, and a false step, or faulty technique in the slightest degree would mean a mighty disaster. Had there been lack of prompt decision to operate, irretrievable damage would have been done, and the tragedy would have been complete.

This prompt decision to operate gave evidence of courage as well as rare surgical judgment. Perforation of the gastro-intestinal tract into the peritoneal cavity is a most serious condition in any case and those who attempt to meet it know that conditions may be revealed when the abdominal cavity is opened that might defy even the surgical skill of the day to overcome. It is for this reason that courage in this case was necessary. When the cavity was opened and the stomach and the intestines had been examined and two openings in the stomach was the sum of the pathological lesions found, the surgeons certainly breathed more freely, for modern surgery was equal to the emergency. If conditions passing surgical skill had been discovered, who can tell what imprecations would have been heaped on those who operated, when death should end the scene!

We repeat: under the circumstances, it required courage for the surgeons to do their duty, but they did it. The medical profession of America is proud of and congratulates the surgeons who worked so faithfully to save the chief magistrate of the Nation. They only did their duty, it is true, and thousands of others might have done as well, but nevertheless praise is theirs and we accord it.

THE METHODS OF THE ANTIVIVISECTIONISTS.

There has just come into our hands a pamphlet entitled "Concerning Human Vivisection, a Controversy," which calls for some notice. It contains the original letter of Mr. James M. Brown, the president of the American Humane Association, to Dr. W. W. Keen and the latter's reply published in The Journal, together with a counter reply or "Review" of the same by an anonymous writer.

It is unfortunate that the American Humane Association can not in its publications give evidence of the truth of the assertion of its president in a recent communication to The Journal that it "can have no quarrel with the medical profession." Its first pamphlet on "Human Vivisection" showed an animus to make the greatest use and widest application of certain alleged facts against the profession generally, not so much by specific statement as by the utmost utilization of illegitimate inference. In the pamphlet just received, the same spirit is manifested. If the Association had really desired to put the matter fairly before the public why did it not include Dr. Keen's last letter? If it had done this the anonymous reviewer would have had an opportunity to point out the "serious misquotations" spoken of by Mr. Brown in his recent communication (August 31), if they existed, a possibility of which we have our doubts. A writer who meets the proven charge of interpolation of whole sentences and ideas foreign to the context in an alleged quotation, as in the Schreiber case, only by admitting a "far too free translation" and who leaves an important term like *carcinoma disséminé* in the original rather than put it into intelligible English, is not one that inspires faith in his criticisms or the accuracy of his assertions.

The subject of human vivisection appears to have been brought up as a side issue to help the general antivivisection crusade, and Dr. Keen's remarks before the Senate Committee that some of the references to the experiments quoted were vague and indefinite, and in other cases that they were garbled, was the starting point of the present controversy. Dr. Keen has fairly proved his statement, as will be admitted by any one who reads his first letter, and it it difficult to conceive how any clear-headed individual can be made to believe the contrary. The attempt to make out a difference of meaning, because in his oral statement he did not use the word "references" but spoke only of experiments, is an unworthy quibble and would not be made except by a quibbler. The context shows that he could mean nothing else, and the quibble is not an answer to the fact that he fully proved their vagueness and indefiniteness as well as the garbling of the quotations.

When a reviewer attempts to excuse the addition of words and sentences to pervert the meaning of an alleged quotation on the plea of the necessity of "brevity of quotation" it is hard to believe he is not conscious of being a humbug. When the original authority is referred to, and in his "review" the anonymous author quotes the original text, the value of the plea of non-responsibility for the "far too free translation" can be properly estimated. The only way one can account for the vagaries of the reviewer in this case is on the theory that he possesses an altogether vicarious conscience that enables him to disregard the ordinary moralities of veracity and the observance of the ninth commandment.

The impression the Humane Association seeks to convey through its anonymous champion is that the medical profession commonly indulges in what it calls human vivisection and that it is generally an apologist and supporter of unjustifiable experiments on human subjects. The fact is there have been a few rare instances of the kind that were promptly condemned by the profession generally, long before the Humane Association ever paid any attention to the subject. The medical conscience is alert on this matter, for if human life and welfare is sacred to any one it is to the physician, and in this he is in bright contrast to the average antivivisectionist. There are other experiments that are questionable in their propriety though their results are not serious, but these also are few and are generally condemned. There are still other cases that are open to misconstruction and misrepresentation; every new operative or therapeutic measure is in its way an experiment, and the venturesome investigator is liable to charges of recklessness and inhumanity by such critics as those of the Humane Association. Ephraim McDowell was in danger of his life from the humanitarians of Kentucky in his day; only his brilliant success saved him, and he was even then under the condemnation of the conservatives of his own profession.

If the antivivisectionists had their way there could be little progress in medicine and surgery; the chance for President McKinley's life is due to the sacrifice of hundreds of lower animals, and the courageous application of the facts thus gained on human subjects falls fairly within what Mr. Brown and his anonymous hack writer would call human vivisection. Twenty-five or even twenty years ago, President McKinley's case would have been hopeless from the start, and if the antivivisection branch of the Humane Association had had its way it would have been so now. Twenty years from now other conditions at present hopeless will probably be within the physician's and surgeon's control, but only through experimentation on the lower animals and the cautious but fearless testing of the results thus gained on the human system.

No one can calculate the beneficial results to mankind of the recent yellow fever experiments in Cuba attended as they were by risk voluntarily assumed and even loss of life. If the justification of such deeds as these is what the Humane Association calls "suggestion of excuses for offenders," they may go on with their threatened exposure of the "crime against civilization" as rapidly as they may desire, only we would suggest to them and their writers that a disregard for truth, not only in direct statement but also in insinuation, is neither advisable nor commendable. So far there seems to have been a very general lack of consideration of this fact in their contributions to the present controversy, especially by their anonymous hack writer.

ACCIDENTAL SERUM DEMONSTRATION.

The Calmette antivenene has, as we learn from the Paris correspondent of the London *Lancet*, been put to the test as regards its efficiency by Dr. Calmette himself on his own person. While handling one of his reptiles the forceps slipped and he was severely bitten in the right hand. He immediately gave himself an injection of antivenene, and though his hand swelled considerably and there was some fever, he was able to attend to business on the afternoon of the same day, and was perfectly recovered on the following one. The serpent was one the poison of which is exceedingly rapid in its action, and the result is claimed as conclusive proof of the protective virtue of the serum. While an experiment like this is hardly to be recommended, the accident was in its way a fortunate one, and was doubtless as satisfactory to Dr. Calmette as if it had been premeditated.

DOG LIVER OIL.

The latest consumption cure—or rather one of the latest, for new ones are bobbing up almost daily—hails from one of our interior cities, and, as given out in one of the dailies of that city, it does not seem an attractive one. The gentleman who has the contract for the removal of dead animals from the streets has found that an oil prepared from the hearts and livers of dogs is a sovereign cure, and a number of cases are named where wonderful results are said to have followed its use. All other seekers for a cure are said to be wasting their time, now that the virtues of the extract from the hearts and livers of deceased canines have been discovered; thus dog liver, not cod liver, oil, is to be the oil of the future. The associations in the account are not exactly such as to make the preparation particularly appetizing, but what does that matter with an infallible cure for such a disease! It finds a utility in even a dead dog, which has heretofore been the very superlative expression of worthlessness.

THE OFFICIAL BULLETINS.

The judicious method of imparting information to the public by bulletins of the President's condition, is a feature that is to be commended. The possibilities of misconstruction of statements and the danger of premature announcements have been very evidently considered. In a case like this, medical secrecy is of course impossible; the people demand information, but it is a matter of some importance that the facts are given out in such a way that they can not be distorted by the imagination of the recipients. The surgeons in attendance on President McKinley have adopted the plan of having every official bulletin signed by the President's secretary as well as by themselves and have, in spite of pressure, apparently refrained as far as possible from any individual expression of opinion. The public can, therefore, feel assured that what it learns is reliable and that there is no confusion of individually expressed opinions or medical gossip in regard to the case. While the President is a public character he has also the rights of a citizen, and it is proper, therefore, that what is given to the public and which in the nature of the case it has a right to demand, should be sent out under official sanction and as it were from the President himself.

INFECTION OF THE URINARY BLADDER.

By reason of the frequent presence of intestinal bacteria, or the colon bacillus, in the bladder, in cases of cystitis, and of the anatomic relations of the rectum and the bladder, it has been thought that under such circumstances direct infection takes place from the rectum. It has, further, been possible experimentally to excite cystitis by inflicting injury upon the rectal epithelium. In order to verify or refute these propositions R. Faltin[1] undertook an experimental investigation, as the result of which it was found that following a lesion of the rectum at the level of the prostate, however profound or extensive, neither cystitis nor the presence of intestinal bacteria in the bladder was observed so long as the latter viscus was uninjured, providing fatal general infection or peritonitis did not occur at the same time as a result of the lesion. Such infection or peritonitis was rather frequent, especially in the sequence of more considerable lesions. Under these circumstances elimination of bacteria through the kidneys may take place and give rise to bacteriuria. In one series of experiments, cystitis developed gradually but once without simultaneous septicemia or peritonitis, and in another series transitory bacteriuria but once. On the other hand, microscopic examination of the rectum and the bladder showed that at times bacteria in large number may invade the rich lymphatic structures between the rectum and the bladder and surrounding the prostate, the seminal vesicles and the bladder beneath the peritoneum, in the sequence of quite inconsiderable lesions of the epithelium. If the bladder is injured in consequence of artificial retention, intestinal bacteria may occasionally find their way from a wound of the rectum along the anatomical paths indicated, with the development of bacteriuria or cystitis.

THE ETIOLOGY OF YELLOW FEVER.

The experiments of Reed, Carroll and Agramonte, while generally accepted as conclusive by the scientific world, are not so accepted by some of the adherents of Sanarelli. One of the most striking attacks on the mosquito theory of the conveyance of yellow fever infection has been made in a paper read before the National Academy of Medicine of Rio Janeiro by Dr. J. B. Lacerda and published in the *Brazil Medico* of August 1. The author rejects the diagnosis of the American physicians because he does not find in their reported cases the characteristic symptoms of yellow fever, the anuria, etc., and all recovered completely in a few days (ignoring the case of Dr. Lazear), and in other ways he deduces that their conclusions are unjustified and fallacious. His great argument, however, is that Sanarelli's bacillus is an established fact, and that it is presumptuous on the part of any one to question it. The clinical picture of yellow fever, he says, is throughout that of a bacillary disease like typhoid or plague, and nothing about it indicates a protozoan origin which he assumes is accepted by Reed and Carroll. Their work therefore is, he claims, unscientific and their attempt to discredit the discoveries and theory of Sanarelli, whether through partisanship or in a general spirit of opposition by unestablished and imaginary findings, is to deliberately seek to obscure the clear facts of science and hinder the onward march of truth! The later results of experimentation must be now known to Lacerda, but in Dr. Caldas, whose serum has failed, he will probably still find an ally in questioning the diagnosis. The paper is, however, altogether too *a priori* and his insinuations of national prejudice, etc., on the part of the American investigators are, to say the least, unscientific. The mosquito origin of yellow fever will be none the less generally accepted, until some stronger points are made against it.

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[1] Centralblatt f. d. Krankheiten d. Harn- und Sexual-Organe, Band xii, Heft 8, p. 401.

THE PRESIDENT'S CASE AND THE NEWSPAPERS.

The majority of the newspapers of the country have honestly tried to supply their readers with all the facts, and only facts, about the President's case. But the possibilities for the "fake" in yellow journalism were too many to be ignored and consequently these were "extraed" with profitable results to the proprietors. While the bulletins of the attending men repeatedly announced that their patient was resting comfortably, these newspapers contained columns, double-leaded and scare-headed, about the "agony" and the "torture" which the President was bravely bearing, all pure "fake." The "agony" of the operation consisted in the little unpleasantness of the first few whiffs of the ether. Except when the wounds were dressed, the President has had no pain, and the dressing of the wounds probably caused but little suffering, if any. There would be no pain from the wounds in the stomach, and of course none from the abdominal wound, unless vomiting ensued after the anesthetic, which we understand was not the case. As is usual in such cases, a few of the newspapers have been free with advice as to what should and what should not have been done by the surgeons, this supplemented by suggestions from members of our profession in the form of interviews. As a rule, those in attendance on a case know better what are the conditions and how they are to be met than outsiders. This does not seem to be realized by some, who, we are sorry to say, belong to the medical profession. The papers are placing the credit of the successful outcome where it belongs. There is no attempt to belittle the work of the surgeons or to reflect on the good judgment of those in charge of the President's case. The advance of surgery is acknowledged by one paper in the sentence: "The surgery of to-day and not that of twenty years ago was applied to the stricken President." Another says: "The public in its gratitude for the progress made by the president within the most critical period following the operation will not forget the credit due to the surgeons who attended and to the practitioners who during the past half century have worked with such good purpose in securing the wonderful advance of surgical science." And another: "If he should finally recover, as all signs now indicate, it will be justly regarded as the most notable triumph of twentieth century surgery." In similar manner the newspapers are all speaking a good word for modern medicine.

The Shooting of the President.

(From our Correspondent.)

Buffalo, N. Y., September 12.

Within an hour of the infliction of the wounds received by President McKinley, he was operated upon at the Exposition Emergency Hospital. The surgeons present were Drs. Matthew D. Mann, Professor of Obstetrics and Gynecology, University of Buffalo; Dr. Herman Mynter, Professor of Operative Surgery, University of Buffalo; Dr. John Parmenter, Professor of Anatomy and Clinical Surgery, University of Buffalo; Dr. E. Wallace Lee, of St. Louis, Mo., who happened to be on the Exposition grounds; Dr. Eugene Wasdin of the Marine-Hospital Service, and Dr. Presley M. Rixey, physician to the President.

The operation was performed by Dr. Mann; first assistant, Dr. Herman Mynter; second assistant, Dr. John Parmenter; third assistant, Dr. Lee. Dr. Eugene Wasdin gave the anesthetic, which was ether. The operation lasted forty-five minutes. Dr. Rixey arrived at the latter part of the operation. There were two wounds, one about the center of the sternum, the other two and one-half inches below the free costal border on the left side and in the semilunar space. It was this latter wound which necessitated the speedy operation. A five-inch incision was made and the course of the bullet followed up. It was found to have penetrated the anterior wall of the stomach. The opening was small and was sutured with silk. After closing this a search was made of the intestines; the stomach was lifted from its position and a larger perforation was found in its posterior wall. It was over an inch in diameter, jagged and irregular. This wound was sutured with black silk also. Continuous catgut was used for the fascia. The skin was coaptated with six through-and-through silkworm stitches, and interrupted catgut was passed between the silkworm gut. The abdominal cavity was thoroughly irrigated with normal salt solution. There was very little food in the stomach at the time of the shooting; because of the dexterity of the operators and this happy incident no foreign matter entered the peritoneal cavity from the stomach. The wound was closed with catgut, without drainage, and bandages were applied. The bandages were removed at 8:30 a. m. Saturday and showed but little staining.

Before anesthesia had passed off, the President was conveyed by ambulance to the residence of Mr. John G. Milburn, president of the Pan-American Exposition, the emergency hospital being for temporary use only.

There are three nurses and three orderlies in attendance on the President. Dr. Rixey and one of the surgeons are with the President each night, and consultations of all the surgeons are held three times a day. Dr. Roswell Park was at Niagara Falls and came on a special train, and assisted during the latter part of the operation. He is surgeon in charge. Dr. Charles McBurney, New York, was called in consultation on Saturday, and is still here. He is the guest of Dr. Mann.

The surgeons are much inconvenienced by the incessant inquiries from reporters and are very guarded in their remarks.

NURSES ATTENDING THE PRESIDENT.

The male nurses in attendance on the President are from the United States Army Hospital Corps, who were detailed for this duty immediately after the shooting of the President, from the detachment of Hospital Corps men on duty with the Field Hospital Exhibit of the Army Medical Department at the Pan-American Exposition. The men selected for this responsible duty were Acting Hospital Steward Palmer A. Eliot, and Privates Ernest Vollmeyer and John Hodgins. All of these men completed the excellent courses of instruction at the School for Hospital Corps men at the Army General Hospital at Washington Barracks, D. C.; besides which Steward Eliot is a graduate of the Bellevue Hospital Training School for Nurses, and Private Vollmeyer is a graduate nurse of the Presbyterian Hospital of New York City. Private Hodgins is a soldier of nine years' army service and long experienced in military hospitals. Much of the attention required in the President's case is of such nature as can not well be performed by female nurses in attendance, and the efficiency of these men is such as to have elicited much favorable comment from the staff of attending surgeons. Army medical officers are highly gratified that the hospital corps should be officially connected with the President's case and have the opportunity of so publicly demonstrating its professional efficiency and the excellence of its personnel.

The female nurses in attendance on the President are Miss Helen Mohan, a graduate of the Buffalo General Hospital Training School; Miss Conley, a graduate of the Buffalo General Hospital Training School and lately clinic nurse at the German Hospital; Miss Hunter, nurse of Mrs. McKinley, and Miss Grace McCullough, of Baltimore, has been summoned.

As the President continues to improve the excellent judgment and great wisdom in the surgeons who first saw him in treating the President as a citizen and in not being concerned with too much formality or red tape become more and more apparent. The operation from the course of symptoms is to be regarded as an aseptic one. The heat resulting from the discharge of the revolver made the bullet practically aseptic, and the perforations of the stomach wall will heal soon because the sutures passed through normal tissue, and not, as in the case of tumor or ulcer, through diseased tissue. The wonderful dexterity of the operators, Drs. Mann and Mynter, prevented any discharge of stomach contents into the peritoneal cavity; hence no symptoms of peritonitis have or are expected to occur.

It is impossible at the present time to get a more detailed technical description of what was done at the operation than that which I have already given.

One of the surgeons in attendance was asked by a press representative to compare Garfield's case and its treatment with that of President McKinley, and in reply stated that to do so would be to give the history of the progress of twenty years of surgery. Besides, he said, the two cases are entirely different. Garfield's wound was an extremely unfortunate one in every way, hard to get at and difficult to handle. The wound of President McKinley, on the other hand, is in many respects a fortunate one. No comparison is possible.

During Tuesday night two stitches were removed, on account of some perceptible irritation. The wound was cleansed and again closed. It is the belief of all the surgeons in attendance on the President that his recovery is certain. If peritonitis were to have appeared its symptoms would have been manifest long before the time of this writing, and the fact that the kidneys and bowels have been functionating normally since Tuesday showed that the surgeons have good reason to be hopeful. Until early Tuesday morning the President received stimulants only hypodermically, but at that time was given a nutritive enema. In the afternoon beef juice was given by mouth. It is not necessary to give sedatives, for the patient gets four or five hours sleep.

Medical News.

ALABAMA.

Personal.—Dr. Blackshear, of Gordon, has located at Webb. ——Dr. Thomas S. Mitchell, Eufaula, has moved to Pensacola, Fla.

Cornerstone of Colored Hospital Laid.—The cornerstone of the Woman's Mission Congress Hospital for Colored Sick at Birmingham, was laid with appropriate ceremonies, August 29.

CALIFORNIA.

Dr. Benjamin F. Church, Los Angeles, is spending September and October in New York, engaged in special lines of post-graduate work.

Dr. Orville O. Witherbee, Los Angeles, has been elected superintendent of Los Angeles County Hospital, vice Dr. Ernest A. Bryant, resigned.

Lectures at Cooper Medical College.—Dr. Malcolm Morris, London, editor of the *Practitioner*, delivered the Lane lectures on "Affections and Diseases of the Skin," at Cooper Medical College, San Francisco, last week.

Dr. Antrim E. Osborne, Eldridge, for fifteen years superintendent of the Home for the Care and Training of Feeble-Minded Children at Glen Ellen, Sonoma County, has been succeeded by Dr. William M. Lawlor, San Francisco.

Personal.—Dr. Louise M. Richter, Garvanza, who has been ill for six weeks, has gone to Santa Barbara for a month.——Dr. Peter L. Wheeler, Oakland, trustee of the Merritt Hospital, has taken a trip to the eastern cities to study the conduct of hospitals.——Dr. Richard C. A. Urquhart, Los Gatos, has gone to Bolinas Bay for his vacation.

Physicians Warned.—The secretary of the San Francisco Board of Health states that a list is being compiled to include the names of all the physicians in the city who neglect to file certificates of birth as required by law. The law requires the filing of birth certificates just as much as it requires the filing of death certificates, and there is a heavy penalty for failure to observe the law. It is intimated that legal proceedings will be begun against every physician whose name is on the list.

COLORADO.

New Hospital at Victor.—It is rumored that the Victor Miners' Union, the Teller County Commissioners and the physicians of Victor are planning to build an emergency hospital.

On the Trail of Itinerant Physicians.—Dr. Seymour D. Van Meter, Denver, secretary of the State Board of Medical Examiners, is in Colorado Springs, investigating the doctors and alleged doctors who come to Colorado Springs, Manitou and vicinity to practice without license.

"Faith Healer" Yields.—Francis Truth, the "faith healer," who is under indictment for fraud and using the mails to deceive, has retired from business permanently, according to an agreement sanctioned by the attorney general, and has publicly burned all his papers, priestly costumes and healing appliances in the presence of representatives of the United States district attorney.

FLORIDA.

Dr. J. H. Colson, Waldo, has been appointed surgeon to the State Hospital for the Insane, Chattahoochee, vice Dr. Louis De M. Blocker, resigned.

The Pensacola Quarantine Station, which has recently been taken over by the United States Marine-Hospital Service, has been appraised at $20,000.

Personal.—Dr. John C. Bishop, of Aucilla, has moved to Alachua.——Dr. Henry H. Stebbins, Tampa, has been visiting his old home in Central City, Colo.

"Mental Healers" Bonded.—Three leaders of the Mental Science Association of the World, who were arraigned at Jacksonville for using the mails for fraudulent purposes, have been released on bonds of $5000 each. They made a specialty of "absent" treatments, with excellent financial results.

GEORGIA.

New Dispensary.—The Presbyterian Hospital, Atlanta, has opened a free dispensary and clinic at 80-82 Central Avenue.

Augusta City Hospital is now reopened after extensive repairs. The present capacity of the hospital is 75 beds, exclusive of rooms for private patients.

Personal.—Dr. George Brown, Atlanta, on his return from the Tuberculosis Congress in London, was shipwrecked near Boston.——Dr. Marion O. Fulcher, Waynesboro, late acting assistant surgeon, U. S. Army, has returned from the Philippine Islands and resumed practice in Waynesboro.

Competitive Examination.—A commission of physicians, consisting of Drs. William S. Elkin, James B. Baird and Joseph B. S. Holmes, Atlanta, has been appointed to conduct a competitive examination, in Atlanta, October 7, of applicants for appointment on the medical staff of the sanatorium at Milledgeville. This examination required by the laws of the state, is necessary to render applicants eligible for election to any vacancy that may occur on the medical staff, but does not apply to persons now holding office in the sanatorium. All applications must be filed with the chairman of the commission, Dr. William S. Elkin, Atlanta, at least one day before the time set for the examination.

ILLINOIS.

The Norbury Sanatorium Company, Jacksonville, has been incorporated with a capital stock of $9000 by Dr. Frank P. Norbury and others.

Dr. Alanson W. Hawley, of the staff of the Illinois Eastern Hospital for the Insane, has resigned, and will go to Europe to take special work in diseases of the eye and ear.

Vaccination Ordered.—The East St. Louis Board of Health has issued a proclamation enforcing vaccination on all persons, and has also formulated rules for the government of the local isolation hospital.

Sherman Hospital Once More.—Peace has decided not to brood over Sherman Hospital, Elgin, just now, despite the reports noted in last week's Journal. The ladies in charge not only formally accepted the resignations of Drs. Rutledge, Taylor and Bridge, September 2, but also cited them to appear before the next meeting of the hospital board and show cause why they should not be dismissed from the staff.

Personal.—Dr. Roy H. Garm, Beardstown, expects to practice in Rock Island.——Dr. and Mrs. James W. Cormany, Mt. Carroll, have returned from an extended visit in the East.——Dr. Samuel E. Munson, Springfield, who was injured by a runaway team in Rochester, is securely convalescent.——Dr. C. C. Rayburn, Roseville, expects to open an office in Kewanee.——Dr. J. Frank Wilson, Versailles, will locate in Bluffs.——Dr. James E. Woelfle, New Grand Chain, has moved to Paducah, Ky.—Dr. and Mrs. E. W. Weis, Ottawa, are visiting Hot Springs, South Dakota.

Chicago.

Christian Hospital has been incorporated with a capital stock of $25,000 by Dr. Emma M. Moore and others.

Needed Precautions at County Hospital.—Within a year three delirious patients at the County Hospital have escaped from their attendants and leaped or fallen from windows unprotected by bars. Two of them were killed.

Chicago Mortality.—There were 483 deaths during the week ended September 7, this being 32 fewer than during the preceding week, but an excess of 39 as compared with the corresponding period of last year. The reduction in the week's mortality as compared with the week preceding is due chiefly to the lower mortality among children under 5 years of age, and is principally attributed to fewer deaths from the acute intestinal diseases, diphtheria, convulsions and infantile marasmus. The continuance of the remarkably low mortality from diphtheria which has prevailed throughout the summer months still holds good, there having been only 4 deaths recorded as due to this disease during the week. With the reopening of the public schools, however, there has in times past been a marked increase in the contagious disease mortality—especially diphtheria.

Personal.—Dr. Robert C. Wilson has returned from a two-months' vacation at Lake Harbor, Mich.——Dr. and Mrs. George W. Whitfield, who have been spending the summer in Colorado, Utah and California, expect to return to the city September 15.——Dr. and Mrs. B. Brindley Eads have returned from their trip to the Pacific Coast and Yellowstone Park.——Dr. Harry P. Woley and wife have returned from Harbor Springs, Mich.——Dr. G. Frank Lydston has returned from a trip through Colorado and New Mexico, and has moved into his new house on Sheridan Road.——Dr. Charles Gilbert Davis has returned from his summer home, Waunita, Colo.——Dr. and Mrs. E. Perry Rice have returned from a trip on the great lakes and the St. Lawrence.——Dr. and Mrs. John E. Owens have returned from a trip to the Atlantic seaboard and Baltimore.——Dr. Violet H. Palmer, formerly of the staff of the Illinois Eastern Hospital for the Insane, has opened an office at 100 State Street.——Dr. Henry Parker Newman has sold his summer home in Highland Park and moved into his new house in Edgewater.

INDIANA.

Dr. James S. Hinkle, Indianapolis, who was injured a year ago in a street-car accident, has filed suit against the Indianapolis Street Railway Company for $10,000 damages.

An Old Offender.—A "doctor" of Mier has been arrested charged with practicing medicine without a license and with having failed to make a death return. He is reported to have been previously arrested on a similar charge, and also to have served a ninety-day sentence in the Indianapolis workhouse for passing counterfeit money.

Typhoid Fever in a Convent.—The opening of the Academy for Young Ladies at Oldenburg, Franklin county, has been postponed until September 17 by order of the State Health Board. There are many cases of typhoid fever in the mother house of the convent, although but five are considered serious. Examination of the structures on the spacious grounds revealed them to be in perfect sanitary condition, but the fifteen cisterns and four wells upon the place were immediately sealed by the officials and samples of the water reserved for analysis. During the past two months sixty cases of typhoid fever have been reported from the institution, but at present writing there seems to have been no mortality.

IOWA.

Charles Francis, Davenport, has been appointed the civil engineer member of the State Board of Health.

Smallpox was discovered in Finley Hospital, Dubuque, August 21, and the patient removed to the isolation hospital.

Smallpox.—Dr. Heinrich Matthey, Davenport, member of the State Board of Health, discovered four cases of smallpox in West Liberty, August 31.

To Raise Fees.—The Council Bluffs Medical Society has decided to raise fees for night calls to five dollars. It is to be hoped that the members will be able to raise the fees.

Dr. Bernard C. Kelly, Carroll, has been annoyed of late by an unscrupulous individual who has been traveling around Carroll county taking orders for glasses. He offers a reward of $10 for information that will lead to the arrest and conviction of the swindler.

Dr. M. Nelson Voldeng, Des Moines, was elected superintendent of the new State Hospital for the Insane at Cherokee, September 5, by the State Board of Control. Dr. Voldeng was for nine years assistant superintendent of the State Hospital for the Insane at Independence.

Personal.—Dr. McCoy had his leg broken in a runaway accident in Clinton, August 20.—Dr. Anne E. Burnett, for several years assistant physician at the Iowa Hospital for the Insane, Clarinda, has resigned and will go to Scotland for a year of study.—Dr. Edward D. Piper, formerly of Chicago and Wall Lake, has located in Moorhead.—Dr. Charles P. Tillmont has moved to Centerville.

LOUISIANA.

The Orleans Parish Medical Society has appointed a committee to investigate the mosquito in its relation to disease.

Lawrence Gomila, a member of the class of 1901, Tulane University, and an interne student in the Charity Hospital, died from appendicitis, August 18.

Tulane Appointments.—Dr. John Smythe, Jr., has been appointed demonstrator of minor surgery, and Drs. L. C. Chamberlain, C. N. Chavigny and I. I. Lemann have been appointed chiefs of clinic to the chair of gynecology, medical department, Tulane University.

MAINE.

New Physicians.—The Board of Medical Registration at its recent examination held at Portland passed fifty out of the fifty-five applicants.

Dr. Philip H. S. Vaughan, Augusta, who has been assistant physician at the Maine Insane Hospital, has moved to Bangor, where he is to occupy a similar position in the newly-established insane hospital.

Personal.—Dr. C. F. Kendall has opened an office in Biddeford.——Dr. D. W. Wentworth, York, has moved to Sanford.——Dr. John Knowlton has returned from six months of study in Germany, and will practice in Bath.——Dr. M. M. Small, Deer Isle, intends to locate in Gorham.——Dr. P. M. Andrews, Gray, has begun his work as house physician of the Maine General Hospital, Portland.

MARYLAND.

The Howard County Grand Jury has found indictment charging Dr. J. W. Sim with failure to report smallpox cases.

Killing of Flies.—The Lonaconing Health Board prescribes the killing of house flies as a sanitary measure, and an anti-pigeon law will go into effect this fall.

Smallpox.—Several case of smallpox are reported in the southern part of Caroline County (Eastern Shore) near the Delaware line, traced to a negro camp meeting.

Personal.—Dr. Joseph Ennis, Burkittsville, has moved to Waynesboro, Pa.——Dr. Frank Dorsey, Green Spring Valley, Baltimore County, has gone to Butte City, Mont.

Baltimore.

Raising Standard for Nurses.—The Sisters of Mercy in charge of the City Hospital are raising the standard in their school for nurses. The course will be a three-year one, with dietetics in the third year.

Smallpox.—In Baltimore during the past three years there have been 48 cases of smallpox, and in no instance has the disease spread beyond the house in which it was discovered. Slight outbreaks in the counties have been treated almost as effectively.

Personal.—Dr. Isabella K. Godfrey is at Atlantic City.——Drs. George A. Fleming, A. Friedenwald and J. C. Hemmeter have returned from summer vacations.——Dr. Ira Remsen, president of Johns Hopkins University, has been cruising along the coast of Maine in Mr. R. Brent Keyser's steam yacht, and is now at Bar Harbor.——Dr. C. P. Strauss is at Buffalo.——Dr. Alfred Whitehead is at Montreal.——Dr. J. L. Graham is at Boston.——Drs. L. M. Allen and H. A. Naylor sailed for Bremen from this port, September 4.——Dr. Allen will take a special course of studies abroad for a year.

MICHIGAN.

Personal.—Dr. Edward B. Patterson, Manistique, has disposed of his practice to Dr Cole, Traverse City, and will go to Europe for a course of special study.

Dr. Benjamin F. Sheeder, Saline, who has lain unconscious for five months at his father's house, in Springfield, Ohio, as a result of cerebral hemorrhage, is improving so that he now can talk and move his limbs.

W. Fred. Buck, Muskegon, a diplomate of the "Independent Medical College," Chicago, plead guilty of practicing medicine without a license, August 30, and on his promise to abandon practice in Michigan, was fined $15 and costs.

MINNESOTA.

A new contagious ward for the St. Paul City and County Hospital is to be erected this winter.

The Detention Hospital, Benson, was struck by lightning, August 28, and set on fire. Fortunately, no patients were in the building at the time.

A hospital annex to the Minneapolis Home for Children and Aged Women, is to be erected at a cost of $7000. It will accommodate about thirty patients.

The anti-vaccination movement in Minneapolis appears sluggish. At a meeting called, August 28, for the purpose of organizing an anti-vaccine society only two persons appeared, and the matter was postponed indefinitely.

Personal.—Dr. Thomas N. McLean, Fergus Falls, is taking a two weeks' vacation, and Dr. Thomas F. McLean will care for his practice.——Major H. F. Hoyt, formerly of St. Paul, who has been serving in the Philippine Islands, is visiting in Minneapolis on leave of absence.——Dr. H. F. Sterzing, Austin, Texas, has located in Mankato.

MISSOURI.

Dr. J. W. Williams, Bloomington, was fined $50 in Macon, August 29, for practicing medicine without a license. He took an appeal to the Circuit court.

New Dispensary.—Drs. John W. Perkins, B. Clark Hyde and others have established a free dispensary in connection with the North End Day Nursery, Kansas City.

Personal.—Dr. Frank Bleakney has opened an office in South St. Joseph.——Dr. F. H. Randall, house surgeon of the Wabash Hospital, Moberly, has resigned and will study in Vienna for a year.

New Hospitals.—Permits were granted to two persons to conduct private hospitals in Kansas City, on the condition that they care for children only and take no maternity cases.——Jefferson City is to have a new hospital to cost $15,000.

NEBRASKA.

Refrigerator for Creighton.—Creighton Medical College, Omaha, has awarded a contract for a refrigerating plant for preserving its cadavers.

Personal.—Dr. and Mrs. Chester A. Brink have returned to Ord after a visit in Chicago. Dr. J. J. McGirr, Beatrice, has returned from a post-graduate course in Vienna.

Lt.-Col. Charles K. Winne, U. S. Army, has been ordered to Omaha to assume charge of the chief surgeon's office of the Department of the Missouri, relieving Lt.-Col. James P. Kimball.

Smallpox among Sioux Indians has caused the postponement of the council of Sioux Presbyterians and Congregationalists, which was to have convened this month at Santee agency.

NEW YORK.

Quarantine Raised.—The smallpox epidemic in Whitehall, which began in June, is now over, and quarantine has been raised.

Age Disqualifications.—The partial examinations for medical students provided for by the last legislature can not be taken by any person under 21 years old. Many students are thereby debarred from taking the examination, and the relief sought for by the law is nullified.

Dr. C. W. Hoyt, Corning, mysteriously disappeared from a C. & B. steamship while en route from Cleveland, Ohio, to Buffalo. His body was recovered from Lake Erie at Geneva, Ohio. As no money was found on the person of the deceased the first theory that the doctor was robbed and afterward thrown overboard is confirmed.

New York State Population.—According to the bulletin issued by the U. S. Census Bureau, dated August 29, the total population of New York state is 7,268,894, the percentage being 50.3 females to 49.7 males. Of these 26.1 per cent. are foreign born and 1.5 per cent. are colored. The latter class is divisible into 99,233 negroes, 7170 Chinese, 354 Japanese, and 5257 Indians.

Buffalo.

Dr. H. R. Hopkins was seriously injured by a collision with a trolley car.

Dr. George H. Calkins has been appointed assistant surgeon of volunteers, with the rank of captain.

Dr. Irving Phillips Lyon has been awarded the Hartwig prize of $50 for his essay on cancer distribution in Buffalo for the past 20 years, with especial reference to the parasitic theory.

Dr. Preston H. Bailhache, surgeon U. S. A., has been detached as delegate to represent the service at the meeting of the American Public Health Association to be held in Buffalo, September 16-20.

Death Certificate Refused.—The coroner of Erie County has refused to issue a burial permit in a case in which the death certificate was signed by Dr. Ferdinand Simon, because the latter is not registered with the health department.

Dr. Kinyi Ugai, a graduate of Bellevue Hospital Medical College and of the Royal University of Japan, Tokyo, has registered and received a certificate entitling him to practice in the state.

Legacy to St. Luke's Hospital.—The will of the late Louis T. Hoyt provides, after the payment of certain legacies, that one thirty-second part of the residue be given to St. Luke's Hospital for the Treatment of Consumptives.

Bequests to Hospitals.—The seventeen institutions which expected to receive $25,000 each under the provisions of the will of the late Andrew J. Garvey, will now, on account of shrinkage in values and litigation, receive less than $9000 each.

Health of Buffalo.—According to bulletins from the Department of Vital Statistics, Buffalo during the last decade has been the healthiest of the large cities of the country. Buffalo is fortunate in her natural healthy geographical position and in a department of health which has as its director Dr. Ernest Wende.

The Park Avenue tunnel nuisance, which may grow into an issue at the coming autumnal elections, was not taken up at the meeting of the Health Board, as it had sent a mandatory letter, and as the New York Central road had promptly complied with what one newspaper claims to be engineering impossibilities. Smoke is to take the brunt of the battle.

More Accommodations for Smallpox Patients.—At a recent Health Board meeting two more pavilions were voted to be erected on North Brother Island. These are to be wooden structures about 100 by 50 feet and one story high. Each will accommodate thirty patients, the total cost to be $17,000. Strictly speaking, the epidemic has been thus far mild and a comprehensive quarantine has much improved the mortality statistics.

OHIO.

The next regular meeting of the Ohio State Board of Medical Registration and Examination will be held in the new office of the Board in the new State House Annex.

The entrance examination to medical colleges will be held September 27 and 28 in Cincinnati, Cleveland, Toledo and Columbus, under the direction of the examiners residing in these cities.

Personal.—Dr. Myron S. Clark, Youngstown, has been elected supreme medical examiner of the Foresters of America.

——Dr. Henry Baldwin, Jr., Springfield, has resigned from the staff of the Clark County Infirmary.

Cincinnati.

Dr. Clarence J. Beckley, interne to Christ's Hospital, is convalescing from a severe attack of typhoid fever at the home of his parents at Price Hill.

Madam Kelch, a cancer doctor, was found guilty of practicing medicine illegally at Wilmington, Clinton County, on August 30 and was fined $50 and costs.

Cincinnati Teachers' Institute.—At the third day's session, September 5, Dr. W. S. Christopher, Chicago, gave an address, "The Child Study Department in the Chicago Public Schools," and Dr. Carl Ziegler addressed the high-school section on "Physical Training for High School Pupils."

PENNSYLVANIA.

Organize Against Deadheads.—The physicians of Hazleton and vicinity have organized an association having for its object the exchange of deadhead lists among its members.

General Vaccination Recommended.—The Mahanoy City Board of Health has urged the advisability of general vaccination in view of the likelihood of an outbreak of smallpox.

Personal.—Dr. Newton S. Rice, Durham, is in charge of the practice of Dr. H. W. Johnson, Riegelsville, during the absence of the latter at the seashore.——Dr. George B. Goheene has opened an office in Glasgow.——Dr. James Love has located in *Dayton.*

Bequest to German Hospital.—By the will of the late John D. Lankenau, Philadelphia, president of the board of trustees of the German Hospital, $750,000 is bequeathed to that institution and a similar amount to the Mary J. Drexel Home for Aged Patients of the German Hospital.

WISCONSIN.

William Caswell, Hillsboro, who was found *guilty several* weeks ago of violating the state law by practicing medicine without a license, was arrested and brought to Viroqua, August 24, but escaped, and, it is believed, has left the state.

Lumber Camp Inspection.—Dr. Henry J. Connor, West Superior, has been appointed inspector of lumber camps for the State Board of Health. He will attend to the cleansing and fumigation of the camps and will also take charge of any smallpox cases in Douglas County.

Dr. H. Booth Kendall, Menasha, on August 28, was convicted of failing to report a smallpox case to the health authorities, and was fined $75 and costs. He states that he will appeal the case. Dr. Rodermund, the anti-contagion agitator, took the stand in the defendant's behalf.

Personal.—Drs. Ernest Copeland, Henry V. Ogden and Henry B. Hitz, Milwaukee, are taking a hunting and fishing trip in Northern Wisconsin.——Dr. J. E. Metcalf, Platteville, has succeeded to the practice of Dr. Thomas E. McDermott, Fennimore.——Dr. Frank Foley, Montello, intends to locate in Neshkoro.

Sanatorium for Consumptives.—A Milwaukee syndicate has been formed to build a sanatorium for consumptives in the pine woods north of Rhinelander. The project includes the purchase of 12,000 acres of land, and the projectors expect to make an initial expenditure of $100,000. Dr. Ferdinand W. Schultz has gone to look over the ground and report on its hygienic fitness.

GENERAL.

Examinations for Army Medical Department.—The examination of applicants for appointment as assistant surgeon in the army has been resumed in Washington and San Francisco; the Army Medical Boards convened in those cities will remain in session so long as there are candidates to be examined. Seventy-six vacancies in the Medical Department still *remain to be filled*, and as it is desired by the military authorities that the Department be filled up to its full legal limit as early as practicable, all eligible applicants will be afforded opportunity for examination; those found qualified will be commissioned at an early date. For further information see elsewhere in this issue or apply to the Surgeon-General, U. S. Army, Washington, D. C.

CANADA.

Anthrax in the West.—Dr. Hargrove, veterinary for the Department of Agriculture at Medicine Hat, N. W. T., states that anthrax has broken out among sheep at Little Current, and that they are dying at the rate of fifty-six per day. Fourteen thousand doses of anthrax vaccine have been wired for from a Detroit firm.

Anthrax in the East.—The outbreak of anthrax in the eastern townships around Ottawa has taken on a serious and peculiar turn. A large number of cattle were inoculated with antitoxin lymph, and a few days later they began to die off in large numbers. Postmortem examinations have shown large numbers of anthrax germs present.

Smallpox Outbreak.—Smallpox is said to be spreading rapidly in the counties of Ottawa and Labelle, province of Quebec; the disease is of the mildest character, and although there are thirty-five cases to date, no deaths have been recorded. The territory is extensive and sparsely settled, and danger is apprehended, as the shantymen who will shortly be going up the Ottawa river will be traversing the infected district.

Deaths from Consumption in Ontario.—The fight against consumption in Ontario is at last beginning to tell in the vital statistics, so says the provincial Medical Health Officer. During July of this year municipalities containing 91 per cent. of the population of the province registered only 182 deaths from consumption, as compared with 284 recorded in July, 1900, by municipalities containing 97 per cent. of the population. A small but noteworthy decline has thus resulted from the improved methods of isolation and the anti-spitting regulations.

Military Doctors Qualify.—The following-named medical officers, having successfully passed the qualifying examinations, have received certificates of proficiency: Surgeon-Major J. Ross, 77th; Surgeon-Captain R. H. Arthurs, 97th; Surgeon-Major J. M. Piper, 7th; Captain A. T. Hobbs, A.M.S.; Lieut. C. N. Lawrie, A.M.S.; Lieut. D. B. Bentley, A.M.S.; Surgeon-Lieut. Balfour, 1st Hussars; Lieut. Tremayne, A.M.S.; Surgeon-Major D. P. Lynch, 42d: Surgeon-Lieut. J. Macoun, 40th; Lieut. A. R. B. Williamson, A.M.S.; Acting Surgeon-Lieut. P. Maloney, 59th; Surgeon-Lieut. A. V. Roy, 6th C. A.; Surgeon-Lieut. Cote, 61st; Surgeon-Major L. M. Genest, 92d; Surgeon-Lieut. E. Savard, 11th; Surgeon-Major T. L. Brown, 54th; Surgeon-Lieut. H. B. Yates, 3d; Surgeon-Lieut. D. D. McTaggart, 1st.

FOREIGN.

Death of Professor Fick.—The Würzburg physiologist, Adolph Fick, died August 22, in his 73d year. His contributions to scientific literature have been numerous and valuable.

Deaths Abroad.—Dr. Hameau, vice-president of the Medical Association of France; Dr. Hermann von Widerhofer, professor of pediatrics at the University of Vienna; Dr. Steinbrugge, professor of otology at Giessen.

Steffan Is Relieved of His Title.—The title of Sanitätsrath—usually coveted by German physicians—was repudiated by Dr. Steffan, as he had no wish to pay the $75 fees attached to the title. After a year or so of red tape the title has finally been withdrawn. The authorities do not state, however, whether the fees are to be repaid or not.

Prohibition of Prescribing by Mail in Germany.—The German authorities are on the point, it is said, of prohibiting "distance treatment," that is, treatment exclusively by correspondence. The kingdom of Saxony was the first to move in the matter, and the Imperial Council of Health has indorsed the proposition, although distance treatment in thinly settled districts can not always be avoided by regular physicians. The measure is to apply exclusively to "mail order" prescribing.

The German Hospital Year for Medical Graduates.—The Prussian "Medicinalministerium" has announced the particulars of the "practical year" in some hospital henceforth to be exacted of all medical graduates before they are inscribed as fully entitled to the degree of "approbirte" physician. The list of hospitals includes only those with fifty beds at least, and the "Praktikants" are assigned one to each twenty-five beds. The list includes all the public and general hospitals, except the plague hospitals and the convalescent homes. All the institutes for special research in anatomy, physiology, pathology, pharmacology, hygiene and legal medicine are included, although not estimated as equivalent to the general hospitals. Only a certain proportion of the time spent in them will be applied on the "practical years." Such institutes, to be eligible, must possess an established scientific reputation and dispose of sufficient material, with resources sufficient to occupy the "Praktikants." The "Landrath," with the assistance of the district physician, will compile the list of eligible establishments for each region.

Married.

John F. Doudna, M.D., Lake City, Mich., to Miss Jessie Ross, of Saginaw, August 21.

S. Charles Mish, M.D., to Miss Wanda Shirek, both of San Francisco, Cal., August 25.

Samuel Mowbray Hammond, M.D., New Haven, to Miss Katherin Dayton, of Torrington, Conn., September 5.

Thomas W. Keown, M.D., resident physician at St. Agnes Hospital, Baltimore, Md., to Miss Edith Livingston, at St. Albans.

John H. Gibbon, M.D., Philadelphia, to Miss Marjorie Young, daughter of Major General S. B. M. Young, U. S. Army, at San Francisco, Cal., September 2.

Deaths and Obituaries.

George William Wells, M.D., Bellevue Hospital Medical College, N. Y., 1868, of Richmond Hill, Queen's County, N. Y., died September 2, aged 57. He was a member of the Kings County Medical Society (N. Y.) and also of the Association of Medical Directors of Life Insurance Companies. He was the editor of the *Medical Examiner and Practitioner*, and was also medical director of the Manhattan Life Insurance Co.

Gates B. Bullard, M.D., Dartmouth Medical College, Hanover, N. H., 1855, one of the best known physicians of Northern New England, died at his home in St. Johnsbury, Vt., September 4, aged 72. He served as surgeon of the Fifteenth Vermont Infantry in the Civil war; later on was made surgeon-general of Vermont, served in both houses of the legislature and was a commissioner for the insane.

William M. James, M.D., College of Physicians and Surgeons, New York, 1862, died at his home in Whitesboro, Utica, August 26, from heart disease and dropsy, after an illness of seven months, aged 62. He served as examining surgeon of recruits and as acting assistant surgeon during the Civil war, and thereafter practiced in Whitesboro and Utica.

Adolph Aronstein, M.D., University of Munich, Germany, 1860, a prominent physician of San Francisco and consulting physician to Mount Zion Hospital, died at his home in that city, August 28, after a lingering illness, aged 66.

William Barnsmore Pape, M.D., Medical College of Alabama, Mobile, 1882, died in that city, August 30, aged 51. He began a career as pianist at the age of 13, but afterwards gave his time to the practice of medicine.

Abner Franklin Bliss, M.D., Castleton (Vt.) Medical College, 1851, who had practiced for thirty-five years past in Wardsboro, Vt., died at his home in that place from pneumonia, August 13, aged 72.

Alexander Bulla, M.D., University of Wooster, Cleveland, Ohio, 1881, who had practiced medicine in Davidson County, N. C., for forty-five years, died at his home in Jackson Hill, August 20, aged 75.

R. T. McMorrine, M.D., McGill University, 1893, died suddenly at his home in Richmond, Que., September 4, aged 34. He was at one time house surgeon at Bellevue Hospital, New York City.

Clyde W. Crumrine, M.D., Western Pennsylvania Medical College, Pittsburg, 1895, of Charleroi, Pa., died at the Allegheny General Hospital, August 29, from nervous prostration, aged 32.

Lawrence Miller, M.D., McGill University, Montreal, for many years a citizen of Bellevue and Dubuque, Iowa, died after a lingering illness, August 27, at his home in Bellevue, aged 73.

John D. Kielty, M.D., College of Physicians and Surgeons, Boston, Mass., 1883, of Fitchburg, Mass., died at his summer home, East Princeton, August 27, from asthma, aged 43.

William Platt McLaury, M.D., College of Physicians and Surgeons, N. Y., 1875, long a resident of Catskill, N. Y., but more recently of New York City, died August 30.

John S. Combs, M.D., Medical College of Ohio, Cincinnati, 1850, of Owensville, Ohio, died at his home in that place, August 21, after a protracted illness, aged 80.

Daniel T. Taylor. M.D., New Orleans (La.) School of Medicine, 1859, for sixteen years a resident of Hot Springs, Ark., died at his home in that city, August 29.

John F. Baughman, M.D., Starling Medical College, Columbus, O., 1851, died, after a prolonged illness, at his home in North English, Iowa, August 29.

William S. Little, M.D., a resident of Cynthiana for fifty-one years, died from heart disease, August 21. He had been an invalid for about five years.

Robert L. Luckett, M.D., Tulane University, New Orleans, La., 1891, of Alexandria, La., died suddenly at his home in that place, August 29, aged 36.

Richard D. King. M.D., University of Nashville, Tenn., died at his home in Bells, Texas, August 19, after an operation for appendicitis, aged 37.

Frank H. Ravenscroft, M.D., Kentucky School of Medicine, 1893, died at his home in Friendsville, Md., August 19, from typhoid fever, aged 31.

Junius D. O'Brien, M.D., New York University, 1858, of Christian County, Ky., died suddenly at his home in Hopkinsville, August 23, aged 70.

Societies.

COMING MEETINGS.

American Public Health Association, Buffalo, Sept. 16-20, 1901.

American Association of Obstetricians and Gynecologists, Cleveland, Ohio, Sept. 17-19, 1901.

Medical Society of the Missouri Valley, St. Joseph, Mo., Sept. 19, 1901.

Nevada State Medical Society, Reno, Sept. 21, 1901.

Medical Society of the State of Pennsylvania, Philadelphia, Sept. 24-26, 1901.

American Electro-Therapeutic Association, Buffalo, Sept. 24-26, 1901.

Oregon State Medical Society, Portland, Sept. 25-27, 1901.

Utah State Medical Society, Provo City, Oct. 1-2, 1901.

Idaho State Medical Society, Pocatello, Oct. 3-4, 1901.

Tri-State Medical Society of Alabama, Georgia and Tennessee, Nashville, Tenn., Oct. 8-10, 1901.

Wyoming State Medical Society, Evanston, Oct. 8-9, 1901.

Vermont State Medical Society, Montpelier, Oct. 10-11, 1901.

New York State Medical Association, New York City, Oct. 21-24, 1901.

Vermont State Medical Society.—The place of the next annual meeting of this Society has been changed from Bellows Falls to Montpelier. It will occur October 10 and 11.

Omega Upsilon Phi Fraternity (Medical).—The fifth annual convention of this body was held August 29 and 30 at Buffalo, N. Y. Dr. Edward M. Thompson, New York City, was elected president, Dr. Dean O. Thompson, Hornellsville, N. Y., secretary, and Dr. George H. Minard, Lockport, N. Y., treasurer. The next convention will be held in New York City in September, 1902.

Reading (Pa.) Medical Society.—The annual meeting of this Society was held August 26. The following officers were elected: Dr. Irvin Hartman, president; Dr. Seymour T. Schmehl, vice-president; Dr. Louis L. Thompson, secretary; Dr. Oan J. Thompson, treasurer; Dr. W. Murray Weidman, librarian; Dr. M. Le Roy Wenger, curator, and Drs. M. Le Roy Wenger and Fremont W. Frankhauser, censors.

New Hampshire Surgical Club.—The sixth annual meeting of this organization was held at Ben Mere Inn, Lake Sunapee, N. H., August 29. The attendance was good and the program carried out in full. The following officers were elected: Dr. John M. Gile, Hanover, president; Dr. Arthur C. Heffenger, Portsmouth, vice-president, and Dr. Nelson W. McMurphy, Concord, secretary-treasurer.

Tri-State Medical Society of Alabama, Georgia and Tennessee.—The next annual meeting of the Tri-State Medical Society of Alabama, Georgia, and Tennessee will be held at Nashville, Tenn., October 8, 9 and 10. An interesting feature of the meeting will be a series of papers on sociological questions. The following papers have been promised: "Syphilis in the Male as a Social Question—Its Prevention," Dr. Julius A. Childs and W. Leon Champion, Atlanta; "Gonorrhea in the Male as a Social Question—Its Prevention," Dr. W. Frank Glenn, Nashville; "Gonorrhea in the Female—Its Results," Dr. Walter J. Bogart, Chattanooga; "Syphilis in Relation to Diseases of the Eyes," Dr. Alexander W. Stirling, Atlanta; "Tuberculosis—Its Prevalence and Prevention," Dr. J. Dawkins Cromer, Atlanta; "Suppression of Consumption," Dr. Richard C. Bankston, Birmingham; "Marriage and Heredity in Relation to Insanity," Dr. T. O. Powell, Milledgeville, Ga.; "The Development and Control of the Sexual Instinct," Dr. John W. Macquillian, Chattanooga; "Legislation and Its Limitations in the Prevention of Crime and Disease from a Legal Standpoint," "Heredity and Acquired Characteristics as Social Questions," Dr. Rufus R. Kime, Atlanta, and Report of the Sociological Committee through Dr. Rufus R. Kime, its chairman.

CANADIAN MEDICAL ASSOCIATION.

The Thirty-fourth Annual Meeting, held at Winnipeg, Manitoba, 28-30, 1901.

There were in attendance over 175 members from all parts of the Dominion, the second largest gathering in the history of the Association. There were several visiting physicians from the United States.

Dr. H. H. Chown, of Winnipeg, the president, occupied the chair.

The Question of Medical Defense.

Dr. Russell Thomas, of Lennoxville, Que., had been delegated by the St. Francis District Association to present this subject. He made a strong plea for the formation of a medical defense union and thought that all were agreed of the necessity for such. He supported his contentions by citing two or three cases already well known to medical practitioners in Canada, and after showing that such defense unions were a success in England, he concluded by outlining the plan of medical defense already in vogue and supported by the St. Francis District Medical Association which he was authorized and prepared to hand over entire to the Association. The discussion of this important matter was deferred until later.

The Question of Medical Education.

Dr. J. R. Jones of Winnipeg delivered the address in medicine. In opening his remarks he referred to the unsolved problems of medical education, the importance of which were especially manifest in view of the establishment of a Dominion Medical Board. Uniform or equivalent curricula, he thought, would greatly facilitate paving the way for the accomplishment of this object. He thought that the great aim of the Association should be to create a Dominion Medical Board upon such a sound and enduring basis that the qualifications could be registered in every province of the Dominion. They should not only be Canadian, but imperial, capable of registration in Great and Greater Britain. There should be no special education for the profession of medicine and the defect in the preliminary education of medical students should be corrected. The standard is not high enough. Many students came into the medical colleges, their minds totally unprepared, undisciplined, not competent to engage in the different studies of a profession with advantage. He quoted from two eminent authorities who favor the retaining of "classical education" as training for professional studies, Dr. Alexander Hill, a member of our own profession and Master of Downing College, Cambridge, and Professor Jebb of Dublin. He referred to medical matriculation examinations and deplored the lamentable defects in the English paper, the most neglected subject in our primary schools. From an experience of many years as an examiner at the University of Manitoba Dr. Jones has concluded that the teaching of English takes a very subordinate position in our schools. The defect was a universal one; and it was obvious that if English should become a prominent subject of medical matriculation examination every student ought to be able to express his thoughts coherently and intelligently. The didactic lecture came in for adverse criticism, and defects and useless wastes of time, which could be more profitably employed, were pointed out. Persistent work in the dissecting room under the guidance of an experienced demonstrator who will describe, discuss, and constantly orally examine the student, is a rational and effective method of teaching anatomy. Medical jurisprudence and sanitary science were not properly taught.

Dr. Jones supported the "case" method of teaching; and from personal experience he favors the English system of clinical clerkships and dresserships as the most feasible, practical and thorough for the development of medical teachings. He referred to the question of Dominion registration and pointed out two serious objections to Dr. Roddick's Bill: 1, the great number of the representatives of the council, entailing expenses beyond, at least, our immediate resources; and 2, the fact that one of the contracting parties to Dominion registration may secede and the elaborate fabric, the work of many years, tumble to the ground.

Dominion Registration.

Dr. T. G. Roddick, of Montreal, who has so long and so ably advocated this much-to-be-desired measure, ably reviewed the subject of Inter-Provincial registration from the time of its inception to the introduction of his Bill at the last session of the House of Commons. The special committee appointed on this subject had not yet reported, so the discussion was postponed until that committee had a chance to meet and report later on in the session. Dr. Roddick now seems to hold to the opinion that the suggestion of Dr. Britton of Toronto, that representation by population, for Ontario at least, would be advisable.

Infectious Pneumonia.

Dr. W. S. Muir, Truro, Nova Scotia, reported four cases, all of which had occurred between April 1 and 13 of this year, in the same house and in the same family. The first occurred in a child of 10 years, the disease terminating by crisis on the sixth day, the child making a good recovery. A sister, age 14 years, contracted the disease; terminated by crisis on the ninth day, but followed two days after by left-sided pleuro-pneumonia. This proved fatal. The third occurred in a sister of 15 years of age, beginning with a pain on the left side and terminating on the tenth day by crisis and recovery. Number four developed pneumonia, but recovery was quick, the patient being about in two weeks. There was no influenza in the town at the time.

President's Address.

Dr. H. H. Chown referred to the work performed in Winnipeg for the purpose of making that city a healthy one, and in spite of the level nature of the land, an excellent system of sewers had been introduced through all the streets; and efficient arrangements had been made for regular flushing of the sewers by means of tilting basins at the upper end of each main sewer. As Winnipeg has two rivers at her door the problem of removing sewage was easily and safely solved. Dr. Chown then referred to the question of tuberculosis and thought that Koch's tentative denial of the oneness of tuberculosis of man and cattle still needs the proof of non-inoculability from cattle to man. He instanced cases of young farmers free from tuberculous taint living in newly-built houses harboring no bacilli and separated by long distances from their neighbors, in whom tuberculosis constantly makes its appearance; and we have here an experiment on a wide scale, and if you can eliminate heredity, house infection and contagion from other cases, to what cause can you describe the origin of these outbreaks?

Epidemic Cerebrospinal Meningitis.

Dr. James McKenty, Gretna, Manitoba, presented this paper, which gave an account of an epidemic occurring in North Dakota during the winter and spring of 1893, within an area extending 50 by 20 miles and was comparatively definitely limited. About 70 persons were seriously ill, and almost as many others suffered from mild manifestations of the disease. Of the 70 cases 25 ended fatally, a mortality of about 35 per cent. In the practice of Dr. McKenty there occurred some 30 cases, a brief record of 22 of these being kept. The average age was 17 years; the youngest fifteen months; the oldest 38 years. The duration of the illness extended from twelve hours to fifteen weeks. No postmortem was made in any case. Dr. McKenty then described in detail the clinical aspects of several cases.

Splenic Anemia, with Case.

Dr. A. J. Macdonnell, Winnipeg, contributed this paper, with the history of the case. In 1898 the number of cases recorded did not exceed thirty, but since that time there have been fifty additional cases reported. Patient aged 27 years; born and lived all his life in Manitoba; family history good; environment good; has never had malaria; habits and mode of life good; positively never had syphilis. The present illness began in August, 1899. Felt heavy on the right side, with a feeling of fulness and weight. In January, 1900, gave up work on account of muscular weakness. There was no vomiting. The patient consulted Dr. Macdonnell in March, 1900, walking into his office with considerable difficulty. There was no enlargement of lymphatic glands. Enlargement of the stomach could never be percussed or palpated. Liver dulness was practically normal. There was no jaundice or pain in the liver region. The patient succumbed to the disease, but no postmortem was held.

Report of Cases Treated with Super-Heated Dry Air.

Dr. W. H. Pepler of Toronto briefly described the apparatus and the method of treatment. It only takes twenty minutes to reach a heat of 300 degrees F. The average duration of the application of the heat is forty-five minutes. The physiological and therapeutical effects noticed were referred to, as dilatation of blood vessels, etc. He administers the treatment one hour after meal time, with due regard that there shall be as little excitement and exertion as possible. He has not seen any ill effects from the treatment. He first gave notes of the case of a patient, a man aged 35 years, who had suffered for some time from varicose ulcer of the right leg, with considerable pain. This patient had a treatment of thirty-five minutes' duration and was able to walk home with very little discomfort. After three times, in ten days, the ulcer was very much reduced in size. The second case was a patient, 22 years of age, who had been troubled with rheumatism for two years past. A temperature of 320 degrees was employed with good satisfaction. Several cases of rheumatism and eczema were reported. The treatment in each case proved highly satisfactory, patients never complaining of any discomfitures and all expressing satisfaction with the treatment. Dr. Pepler subjects a considerable portion of the patient's body from a temperature of 280 to 320 degrees F. The results are often not apparent for some time after treatment.

Orthopedic Treatment of Deformities and Disabilities Resulting from Diseases of the Nervous System.

Dr. B. E. McKenzie of Toronto spoke of disabilities and deformities resulting from paralysis, some of which were commonly regarded as hopeless; but the conditions of a great majority of them were remediable and should receive a considerable amount of attention. He was at some pains to explain the respective motion of joints, particularly the ankle joint and knee joint, especially calling attention to the normal conditions of equilibrium, and then showed how the muscles of some of the groups at times become paralyzed and the balance and equilibrium thereby destroyed. Mechanical treatment was often necessary and often efficacious as well; massage and electricity had their respective places, but he made particular reference to the method of treatment that had been in vogue for twenty years and had been introduced on this continent by Dr. Parish of Philadelphia.

Mild Smallpox.

Dr. G. A. Kennedy, McLeod, Alberta, dealt with the recent outbreak of the disease in the Northwest Territory, an outbreak which was widespread and which had existed for some time before its true nature was recognized. Dr. Patterson, Quarantine Officer for the Dominion Government, was satisfied that there had been 1500 cases. A noteworthy fact was that the greatest number of cases occurred among the French halfbreeds, who had never been vaccinated, and, further, Indians on reserves had not suffered to any great extent, as annual vaccination is the rule. Fifty per cent. of all cases were extremely mild in character; 40 per cent. were cases of typical varioloid; 10 per cent. were severe, almost confluent. The mortality was slight, only thirteen deaths occurring; and the disease prevailed fully as much amongst adults as amongst children.

At the close of this discussion the following resolution was moved by Dr. R. S. Thornton, seconded by Dr. J. L. Bray, and unanimously adopted: "Resolved, That in view of the general prevalence of smallpox throughout the continent, this Association desires to urge upon the profession and the public generally the necessity of vaccination and re-vaccination."

Chronic Ulceration of the Stomach Simulating Cancerous Disease.

Dr. J. F. W. Ross, Toronto, described the case of a woman of 20 years of age, the condition of whose stomach had been bad for three years. She was a nurse in the training school of a hospital and her gastric conditions grew gradually worse. Dr. Ross was asked to see the patient by Dr. E. B. O'Reilly, Hamilton, in December, 1899. He found her emaciated with the opium habit already formed. In January, 1900, rectal alimentation was being persevered in with considerable benefit. In March, 1900, she was discharged from the hospital and remained well for two weeks. As soon as food passed into the stomach great rigidity of the right rectus muscle was noted. When the patient came under Dr. Ross's attention she weighed about 75 pounds. As malignant disease of the stomach is rare at this age of life, it was difficult to diagnose the tumor as such, and the symptoms pointed to the pyloric end of the stomach. It was not possible to say whether cancerous or not. The symptoms pointed to the presence of ulcer, but the thickening easily made out led to the belief that malignant disease had been grafted on to the ulceration. Some dilatation also could be made out, but the rhythmic muscle waves so characteristic of pyloric obstruction could not be found; but large growth was found at the pyloric end. The case was looked upon as hopeless and decision was arrived at not to remove the growth, but to give temporary relief by gastroenterostomy. This was done and the patient made an uninterrupted convalescence. Eleven months after the operation the patient weighed 140 pounds and looked the picture of health. On examination of the abdomen no mass could be felt and the patient was not suffering from any gastric symptoms at all.

Medical Defense.

The report of the Committee on Medical Defense was here presented by W. S. Muir of Truro, Nova Scotia. It reported favorably on the formation of a Medical Union, and the organization thereof was immediately perfected. It will be known as the Medical Protective Association, will be incorporated, and will have for its object the protection of the character and interests of medical practitioners in Canada. It will further promote honorable practice, will aid in suppressing or prosecuting unauthorized practitioners, and will seek to advise and defend or assist in defending members in cases where proceedings involving questions of professional principle or otherwise are brought against them and other like matters. Dr. R. W. Powell of Ottawa was elected president; Dr. McKinnon of Ottawa, secretary, and Dr. James Grant, Jr., of Ottawa, treasurer.

Report of Committee on Dominion Registration.

It is proposed to secure an amendment to the B. N. A. Act, or, to take advantage of section 91 of that Act, and under it obtain legislation from the Dominion parliament, by which the profession in Canada might form a Dominion Council which could be supplemented by legislation by the various provinces recognizing any certificate of standing issued by the Dominion Council as entitling a holder to practice in such provinces. Dr. Muir approved of Dominion registration and spoke for the province of Nova Scotia. Dr. Jones voiced the sentiments of the profession for Manitoba. Drs. A. A. McDonald and J. L. Bray endorsed the scheme for Ontario. Dr. Russell Thomas spoke for Quebec. Dr. Christie said that New Brunswick was in favor of Dominion registration. Dr. Lafferty said the Northwest Territories were favorable.

Varieties and Distribution of Bacillus Diphtheriae and Their Clinical Significance.

Dr. F. F. Westbrcok of the University of Minnesota presented a paper on this subject, primarily from the laboratory point of view. He exhibited a carefully prepared chart showing in tabulated form the results of numerous examinations in schools and stated the conclusions which he deducted from these facts. Formerly, it was believed that the bacillus remained localized at its point of entrance, but now within recent years, however, careful observations have shown that the toxins had been distributed throughout the body and the bacillus itself found in organs far removed from the atrium. From evidences of 230 cases of diphtheria at autopsy, observers had called attention to the frequency with which the bacillus of diphtheria was found in the organs of the body. The bacillus and its toxins have been shown to be capable of producing lesions which differ greatly from each other, as in ulcerative endocarditis, meningitis, etc.

Hairy Tumor from the Stomach Weighing 23 Ounces. Specimen. Recovery.

Dr. H. A. Bruce, Toronto, described this case, a woman aged 26; she had been married six years and had two children. A lump was noticed in the abdomen two months previous to the birth of the last child. Patient had no symptoms. The lump was about 5 inches in width and it could be lifted forwards. It reached to within 3 inches below the umbilicus. It gave the patient no special discomfort, there being absolutely no symptoms present. Dr. Bruce advised exploratory incision. This was done on July 22 last at St. John's Hospital, Toronto. On opening the abdomen in the middle line the spleen and kidneys were found in a normal condition, but there was a large mass in the neighborhood of the stomach. The surgeon could make out the mass lying free in the stomach, a portion extending through the pyloric end of the stomach. An incision was made into the stomach and the tumor removed. After removing the mass of hair, the opening of the stomach was closed in the usual way. Hot salt solution was given for two hours and nutrient enemata for six hours. Twenty-three hours after the operation sips of hot water were given by the mouth. Forty-eight hours after operation patient was given one-half ounce of milk and lime water every hour. She left the hospital on the twentieth day. The tumor was entirely of hair exactly the same color throughout, and the same color as the hair on her head. It was about 24 inches in length, being about 2 inches in diameter at one end and gradually tapering down to a point at the other. Dr. Bruce offered no solution as to how the hair got into the stomach. There were no evidences of hysteria present in the patient. There are some specimens of hairy tumors in the McGill Museum at Montreal.

Case of Transplantation of the Ureter for Cure of Uretero-Vaginal Fistula.

Dr. A. Lapthorn Smith, Montreal, related the case of a married woman, 34 years of age, who came to him on July 1, 1901. During parturition, forceps were employed and the vagina lacerated and ever since there has been a constant flow of urine by the vagina. Operations for her relief had been performed in England without success. Dr. Smith had seen Sanger perform an operation of this character in Leipsic when he was there three years ago, namely, to open the peritoneum running over the large vessels at the brim of the pelvis and to feel for the artery, see the vein and pick up the third tube, which was the ureter. The operation was done in the highest Trendelenburg posture. A very small incision was made in the peritoneum lining the pelvis in the line of the ureter, a silk ligature was passed around it and then the ureter was severed a little above the ligature. The end of the ureter was split open to a distance of a third of an inch. A slit was then made obliquely into the right upper corner of the bladder and the ureter stitched into it, the mucous membrane of the ureter to the mucous membrane of the bladder with very fine chromicized catgut. This is the first time this operation has been done in Canada, and Dr. Smith stated that not a drop of urine had passed through the fistula since.

Syphilis as Seen by the Ophthalmic Surgeon.

Dr. F. Buller, Montreal, said that it often falls to the lot of the ophthalmic surgeon to discover the presence of active syphilitic virus where the disease had long been considered cured, or that the subject cherished the belief that there was no more to fear from it. The ophthalmic surgeon is scarcely, if ever, called upon to treat the disease in the primary stage. The largest share of his work is in connection with the tertiary period, and in this class of cases the disease has been apparently cured for a long period of time. Discussing medication, Dr. Buller does not believe that the protiodid of mercury, at least as ordinarily administered, is a reliable anti-syphilitic. He appears to favor the inunction method first and then gray powder.

The Present Outbreak of Smallpox in America.

Dr. H. M. Bracken, Minnesota, outlined the origin and traced the course of many outbreaks in various parts of the state of Minnesota, with a total of 9429 cases, and the disease has still many centers in that state. It is impossible to locate positively the source of the present widespread epidemic farther than that it spread from the Southern and Southwestern states into North Dakota, Minnesota, Nebraska and Montana. He suggested that it was probably imported into the United States by Cuban refugees before war broke out. Vaccine was frequently spoilt by not being kept in proper temperatures, as it was frequently being shipped in cans which were too hot and subsequently kept in warm offices. The health commissioner of Minneapolis kept all his vaccine in an ice-box, but, of course, not frozen, and had obtained good results. Replying to a question in regard to isolation Dr. Bracken favored eighteen days' quarantine.

Necessity of a Recognition and Isolation of Trachomatous Patients in Canada.

Dr. W. Gordon M. Byers, Montreal, in his paper, recited the history of a young girl from Glengary county, Ontario, who came to the clinic at the Royal Victoria Hospital, Montreal, with a most intense condition of granular lids. She had been unable to open her eyes properly for months past, and her vision was reduced to the counting of fingers. The seriousness of her disease had not been recognized at home, as she mixed freely with other members of the community. Another case was referred to in the County of Leeds, and in this case as well no precautions had ever been taken to prevent the spread of the disease. Dr. Byers believes that there are many unrecognized and untreated cases scattered here and there throughout the Dominion. The disease is said to be prevalent in districts of Manitoba and certain centers in the eastern counties of Ontario and others in Quebec. The trachoma problem has had to be faced by one government in Europe, and the matter has been brought to the attention of the Dominion government, which has not yet taken any action in the matter. Dr. Montizambert stated that the question of exclusion of trachomatous immigrants had been under consideration by the government for some time. He considered these people somewhat undesirable immigrants.

On the Treatment of Typhoid Fever.

Dr. J. L. Bray of Chatham discussed this subject under medicinal, dietetic and hygienic headings. The first he thought might be eliminated except in cases where complications arise, and he thought a certain amount of medicinal treatment useful during the initiary stages. He was in the habit of employing calomel. Tympanites could be avoided to a great extent by a proper diet. In feeding he now gives very little milk, but that little always peptonized. He believes in making the patient drink two or three quarts of pure water in the twenty-four hours. Albumin water with sugar may be given from the first; after the first two weeks he gives liquid peptonoids, or some of the numerous preparations of beef, jellies, mutton broth or a soft-boiled egg.

The Address in Surgery.

Dr. O. M. Jones, Victoria, B. C., opened his address with a reference to surgical diseases in Western Canada as compared with those in the East, and stated that he had often found Western sufferers more impatient, which often demanded severer methods.

A Surgical Procedure for the Relief of Ovarian-Tension Pain.

Dr. Henry Howitt, Guelph, Ontario, read this paper. Is not pain frequently, if not usually, caused by tension on some nerve filament? In Dr. Howitt's opinion the answer should be in the affirmative. The operation Dr. Howitt employs is quite simple. The ovary is exposed and then a number of cross-sections are quickly made through the tense capsule in such a manner as to divide it. Then the larger Graffian follicles are opened. These are merely touched with carbolic acid. If the capsule is thickened a portion should be removed. Hemorrhage has never been troublesome. Adhesions give rise to no complications. Dr. Howitt recited the histories of two or three cases in support of the operation.

Symposium on Tuberculosis.

Prof. Russell of the University of Wisconsin introduced this subject in a paper on human and bovine tuberculosis and their inter-relation. The rapid extension of the disease among cattle within the last few decades has forced upon breeders and dairymen the necessity of considering this subject whether they desire it or not. It is customary in many quarters, even yet, to decry all consideration of this matter as unnecessary, inexpedient, and harmful to the dairy interests. But as is too frequently the case, the motive for such action rests upon a financial foundation, and many breeders are averse to a calm, judicious discussion of the matter simply because it may mean financial loss to them.

The slow, insidious nature of the disease that characterizes it in the human is also to be found in the cattle, and not infrequently an animal may be infected with the seeds of the disease for a considerable time—even a year or so—without showing in any degree physical symptoms that are manifest to even the animal expert. Such animals are not diseased in the ordinary term, i. e., they are not capable of transmitting the disease, either directly or indirectly, through their milk supply or meat. The affection in such cases is latent, generally confined to various lymphatic glands; but animals so affected are, however, potentially dangerous, for the latency of the disease may be overcome through the operation of various factors, and the chronic type may thus be awakened into an acute phase. It is in this way that the disease spreads slowly and unperceived through a herd. Before it has made such inroads as to cause actual death of any considerable number of animals, many more have acquired the trouble, at least in the earlier phases. Necessity of controlling its spread and eradicating it is evident for the sake of the herd itself, if from no other point of view.

Dr. A. J. Richer of Monreal contributed to the next paper on the "Sanitarium Treatment of Tuberculosis." The treatment is made up of rest, outdoor life, overfeeding and medical supervision. This latter was described as the keynote to success in phthisical treatment. Overfeeding was also emphasized.

Dr. Gilbert Gordon of Toronto referred to the "Etiology and the Early Diagnosis of Pulmonary Tuberculosis." He spoke of the early stages of the disease, and thought that we ought to be able to diagnose it before the appearance of the bacilli in the sputum. Direct inheritance he considers very rare. The inhalation of dried sputum is the most direct cause. Dr. Gordon considered that people are woefully behind in Canada in fighting this plague, and more money should be spent by governments and philanthropic individuals in fighting this disease. He went carefully into the symptoms of the pre-tubercular stage and considered that a persistent cough was a very dangerous symptom.

Election of Officers.

These officers were elected for the ensuing year: President, F. J. Shepherd, Montreal; vice presidents: For Prince Edward Island, S. R. Jenkins, Charlottetown; for Nova Scotia, T. F. Macdonald, Hopewell; for New Brunswick, Wm. Christie, St. John; for Quebec, J. Alex. Hutchison; for Ontario, Bruce L. Riordan, Toronto; for Manitoba, A. J. Macdonnell, Winnipeg; for Northwest Territories, H. G. McKid, Calgary; for British Columbia, J. M. Lefevre, Vancouver; general secretary, George Elliott, Toronto; treasurer, H. B. Small, Ottawa. Montreal was selected as the next place of meeting.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

Acne Vulgaris (Blackheads).

According to Dr. E. M. Alger, in *New York Med. Times*, the choice of a local application in the treatment of the foregoing depends largely upon the condition present. Where blackheads are numerous and but few pustules are present the following is recommended by him:

℞.	Hydrarg. bichloridi	gr. ii		12
	Resorcin	ʒiss	6	
	Aq. rosæ q. s. ad	℥iv	128	

M. Sig.: Apply to the face several times daily.

The above should be applied often enough to cause considerable exfoliation of the epidermis, without producing inflammation of the true skin to any extent.

In cases where pustulation is the important feature for treatment, he regards sulphur as far more useful than resorcin. He, under such circumstances, advices the following, the strength of which may be varied to suit the conditions in each individual case:

℞.	Sodii hyposulph.	ʒiv	16
	Sulphuris	ʒi	4
	Aq. rosæ	℥iv	128

M. Sig.: Apply externally as desired.

Caution is given not to use the bichlorid and the sulphur on the skin at the same time. He further states that individual lesions can often be aborted in their infancy by passing into the follicle a blunted needle dipped in carbolic acid, or by painting with pure ichthyol over night. If after this treatment the skin remains rough and dry the following should be applied:

℞.	Resorcin	gr. xx	1	*33*
	Olei theobrom	℥i	32	

M. Sig.: Apply locally at night.

Salve to Remove Corns.

The following combination in the form of a salve is recommended for the removal of corns:

℞.	Pulv. plumbi acetatis		
	Pulv. myrrhæ		
	Pulv. camphoræ		
	Plumbi oxidi āā	ʒi	4
	Olei olivæ		
	Petrolati āā q. s. to make paste.		

Misce. Sig.: For local application; or:

℞.	Acidi salicylici	ʒss	2
	Acidi lactici	ʒss	2
	Ext. cannabis indicæ	ʒiv	16

M. Sig.: Use as a local application in treatment of corns.

Treatment of Scarlatinal Nephritis.

Dr. Charles G. Kerley, as noted in *Med. News*, states that every case of scarlatina, whether mild or severe, ought to be treated as if nephritis were to be expected. A child with scarlet fever is to be considered ill for five or six weeks, even if no complications are present. The nephritis, if present, is too often overtreated by the physician. He deprecates the heroic use of drugs like digitalis and pilocarpin, which are too often indiscriminately prescribed, as well as irritant cathartics and the diuretic salts of potassium. He recommends, first of all, a light diet, the relief of constipation with small doses of calomel; small doses of aconite, ¼ minim of the tincture every two hours to a child of 3 years, to promote diaphoresis and diuresis. He also recommends colonic flushings, employing the normal saline solution at a temperature of 110 F. A child of 3 years should be given 16 to 24 ounces of the solution, to be retained and repeated every six or eight hours. The child should be kept in bed until the urine has been normal for two weeks.

Camphor in the Treatment of Varicose Ulcers.

Attention has been called to the value of camphor dressings in promoting cicatrization of varicose ulcers of the legs by the *Med. Press;* especially is this dressing adaptable in ulcers which are very refractory to treatment. An ointment made up similar to the following is recommended:

℞.	Pulv. camphoræ	gr. v		30
	Zinci oxidi	gr. l	3	30
	Adipis q. s. ad	ʒiv	16	

M. Sig.: Apply locally.

If this should be found to be too irritating the following should be applied in its stead:

℞.	Camphoræ	gr. vi		36
	Zinci oxidi	ʒii	8	
	Olei olivæ	ʒiiss	10	

M. Sig.: Apply locally.

An alternative application is a solution of camphor in spirit, but this should be applied only after the ulcerated surface has been thoroughly cleaned of scabs and crusts by poultices. It is asserted that complete healing of the ulcer will take place within three weeks.

For the Obstinate Diarrhea of Tuberculosis.

The following combination containing ichthoform is recommended in the treatment of tubercular diarrhea:

℞.	Ichthoformi	gr. v		33
	Tannalbin	gr. x		66
	Bismuthi subgal.	gr. x		66
	Codeinæ	gr. ¼		015
	Olei menth. pip.	m. ¼		015

M. Ft. Chart. No. i. Sig.: One such powder every two to six hours.

Treatment of Cystitis.

Howland, in *Med. News*, states that cystitis is always caused by the presence of micro-organisms, chiefly the colon bacillus, streptococcus pyogenes and staphylococcus pyogenes. In the treatment of acute cystitis, he advises rest in bed, the use of opium and belladonna, either by the mouth or in the form of a suppository. In severe cases he instils into the deep urethra a few drops of a 4 per cent. solution of cocain. He does not recommend any local treatment to the bladder. In the chronic form he irrigates the bladder daily with solutions of salicylic acid, nitrates of silver or mercury bichlorid. Internally he employs urotropin in 7-grain doses as an antiseptic.

Alcohol Compresses in Appendicitis.

Prof. Filatoff, in *Rev. de Ther.*, has used with success alcohol compresses in appendicitis. A gauze compress folded four times and large enough to cover the whole abdomen is soaked in a 95 per cent. solution of alcohol and lightly squeezed before being applied to the abdomen. When applied, a piece of flannel should cover the gauze and an ice bag placed over this. The gauze compress should be changed when the alcohol has evaporated. Opium should be given internally at the same time.

Treatment of Acute Eczema.

Dr. R. Lederman, in *Kan. City Med. Rec.*, states that the best results are obtained by the free application of dusting powder during the erythematous and early papular stages. He considers zinc, bismuth, aluminum and dermatol as the best. For the itching he recommends a lotion similar to the following:

℞.	Thymol	gr. i		06
	Aq. rosæ	℥i	32	

M. Sig.: Apply locally before using the dusting powder.

When crusts have formed he uses a paste of salicylic acid in olive oil or, what he considers even better, the following:

℞.	Zinci oxidi	ʒss	2	
	Bismuthi subnit.	ʒss	2	
	Ung. aq. rosæ	ʒii	8	
	Ung. simplicis	ʒii	8	

M. Sig.: For local application.

For the chronic form, salicylic acid should be used in the form of an ointment of 5 or 10 per cent. strength.

Treatment of Acute Coryza.

The *Archiv. fur Laryngologie* recommends orthoform as a valuable drug in abating the symptoms and cutting short the attack. The following combination is used in the form of an insufflation:

℞.	Orthoformi	ʒii	8	
	Sodii-sozoiodol	ʒii	8	

M. Sig.: Use in the form of an insufflation to cover the membranes of the nasal fossæ and posterior nares.

This should be repeated several times a day until the local symptoms have subsided. The effect of the orthoform is to produce a certain amount of anesthesia of the membranes and to reduce the congestion. In this way the local inflammation may be aborted. The sooner the treatment is begun the better.

Treatment of Paralysis Agitans.

The cure of paralysis agitans is hopeless, but Dr. R. L. Williamson, in *Med. Chronicle*, considers a number of methods he has tried for the relief of the more pronounced symptoms. He has found no virtue in any treatment by drugs, except in the use of hyoscin hydrobromate, duboisin sulphate and hyoscyamin hydrobromate. He recommends that the first of these preparations be used in doses not to exceed grain 1/150 each, dissolved in aqua chloroformi. The dose may be increased to 1/100 grain in some cases, when no toxic symptoms have appeared. If hyoscin fails to relieve the tremor he suggests the use of duboisin sulphate, which as a rule is not so efficient as the former.

The following is employed hypodermically by M. Bourneville in the treatment of paralysis agitans:

R.	Liq. potass. arsenitis	ʒii	8	
	Glycerini (neutral)			
	Aq. destil. āā	ʒi	4	

M. Sig.: Inject fifteen minims hypodermically.

Treatment of Tuberculous Peritonitis.

I. Burney Yeo, in *New York Med. Record*, states that he has seen good results follow the internal administration of iodoform gr. ¼ and creosote m. ½ and the application to the surface of the abdomen of an ointment as follows:

℞.	Ung. iodoformi (10 per cent.)			
	Olei morrhuæ āā	℥i	32	

M. Sig.: Apply locally to the abdomen twice daily.

He states that the best results are obtained in the early stages and in those where there is more or less ascitic fluid. In the advanced chronic cases with induration of the various intestinal coats, adhesion of the coils of the bowel to each other, large caseous mesenteric glands, neither surgical nor medical treatment offer much. He believes, however, that if iodoform is rubbed into the skin of the abdomen in a young person, it rapidly enters the circulation and is eliminated and detected in the secretions including the secretions of the serous cavities and therefore reaches the location and seat of the tubercular deposit.

To allay the pain and irritation of the bowels a mixture containing the following was prescribed:

℞.	Bismuthi salicylatis	gr. xv	1
	Spts. chloroformi	m. xv	1
	Tinct. card. comp.	ʒi	4

M. Sig.: At one dose to be repeated in six hours.

Treatment of Meningitis.

Dr. Daniel R. Brower, in an article on treatment of tuberculous meningitis, gives most satisfactory results obtained from the use of the following:

℞.	Iodoformi	ʒi	4
	Lanolini	℥i	32

M. Ft. Ung. Sig.: Apply locally to the scalp.

Before applying this ointment the head must be closely shaved and the ointment thoroughly rubbed in, after which the ice-cap can be applied. The iodin reaction in the secretions can be obtained within a very few minutes after the ointment has been applied. His percentage of recoveries indicates that there is virtue in this method of treatment.

Medicolegal.

One Thousand Dollars for Breaking of Leg.—The Supreme Court of New Jersey holds, in the case of Wiezynski vs. the American Sugar Refining Company, that an award of $1000 for the breaking of the leg of an employee, a Pole, who was engaged in receiving bags of crude sugar thrown down to be loaded on trucks, was not unreasonable.

Twenty-Five Thousand Dollars Too Large an Award.—The Supreme Court of Mississippi holds it impossible to sustain a verdict for $25,000 in the appeal of the Cumberland Telephone & Telegraph Company vs. Pitchford. Here a lineman, 22 years of age, was thrown to the ground by coming into contact with a live wire while up a telephone pole. His spinal column was fractured, and he was paralyzed from the waist down. The attending physician stated that he found him in a condition of profound shock, and that he suffered considerably up to within 24 hours of his death, which occurred two weeks after the accident. The court holds $12,500 to be a sufficient amount of damages to allow in the case.

Data Required to Recover for Medical Services.—In St. Louis Southwestern Railway Company of Texas vs. Stonecypher, an action brought by the latter party to recover for personal injuries, it was averred that it had been necessary for him to incur an expense of $100 for doctors' bills and medical treatment; $40 to one physician named, and $60 to another, and that the amount charged by each of the physicians was a reasonable charge for the services. Exception was taken because the dates and place at which the alleged services were rendered were not also stated. But the Court of Civil Appeals of Texas sees no error in the overruling of the exception. It says, that the party was suing for the amount that the company had caused him to pay for doctors' bills and medical treatment, and it was not incumbent upon him to more specifically set out his claim. He was not suing on account, where he had performed services at different times and places, but was suing for an amount that he was compelled to pay by reason of the company's negligence. The case would have been different had the doctor been suing to recover the amount of his bill. In such case it would have been necessary for him to have itemized his account.

Statements of Injured Persons as to Past Suffering.—The Court of Civil Appeals of Texas says, in St. Louis Southwestern Railway Company of Texas vs. Martin, that the declarations of a person suffering pain are admissible in evidence, but must be expressions or complaints made at the time, and the natural and instinctive manifestations of pain and suffering. But the same principle does not apply to statements made to an attending physician, because he testifies as an expert, and his opinion must be based upon data furnished him. Again, it says that statements made to a physician as to symptoms and past suffering are no more admissible as evidence in favor of the injured party in a personal injury case than if they had been made to some other person. They are only admissible for his information, in order to enable him to form an opinion. If they are made to him in the course of treatment, they come within the exception. But, when the physician has been employed by the plaintiff to make the examination for the purpose of testifying in the case, such statements, it holds, should not be admitted.

Liability for Injury of Property by Pest House.—The Court of Appeals of Kentucky holds, in City of Paducah vs. Allen, that, where a city or other municipality erects and maintains a public institution, such as a hospital for the treatment of smallpox or eruptive diseases, which, by reason of its nature, endangers the lives or health of the occupants of adjacent premises, as by subjecting them to contagious or infectious diseases, it is not only a nuisance, but it is such an invasion of the property rights of such adjacent holder or holders as amounts both to an injuring and a taking of property, under the provision of the state constitution which requires that just compensation must be made for private property taken, injured, or destroyed, for public use. The measure of damages to which an adjacent owner will be entitled, if the establishment of such a hospital or pest house is permanent, the court holds, will be the amount that the market value of his property is impaired thereby. Nor does the court consider that it will be rendered otherwise by the fact that medical witnesses testify that there is no actual danger of the disease being contracted by persons on such adjacent property. For example, it holds in this case that there was such an invasion of the property rights of an adjoining owner as to entitle him to recover for the depreciation of the market value of his property, although the hospital or pest house in question was located about 250 yards from his fence, and about one-half mile from his residence.

Board of Health Can Not Be Controlled by Injunction.—The Supreme Judicial Court of Massachusetts holds, in the case of Stone vs. Heath, that the board of health of a town can not be restrained, either under the general equity power vested in the Superior court, or otherwise, from entering on premises where it has adjudged that a nuisance exists, and abating the alleged nuisance, if the owners of the property do not abate it as ordered, and that it can not be restrained from instituting proceedings against such owners on account of their failure or neglect to comply with the order of abatement. The jurisdiction conferred by the statute, it says, is summary in its nature, and the objects to be attained by its exercise would be defeated in many, if not most, cases, if the orders of boards of health were subject to judicial examination and revision at the instance of parties affected by them before they could be carried into effect. The decision of the board of health is not, however, in such cases final and conclusive to all purposes in regard to the parties interested on the question whether the thing complained of was a nuisance. It establishes, for the time being, that there is a nuisance, and those who act under the orders of the board of health in abating it are protected thereby while engaged in the performance of the duty thus imposed. But they act at their peril if it turns out in subsequent proceedings that there was in fact and in law no nuisance. And the question whether there was a nuisance, or whether, if there was one, it was caused or maintained by the parties charged therewith, may be litigated by such parties in proceedings instituted against them to recover the expense of the abatement, or may be litigated by the parties whose property has been injured or destroyed in proceedings instituted by them to recover for such loss or damage, and may also be litigated by parties charged with causing or maintaining the nuisance in proceedings instituted against them for neglect or failure to comply with the orders of the board of health directing them to abate the same. A board of health having adjudged that a nuisance exists, the question of what influences or motives may have set the board in motion, the court holds, is immaterial.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

Medical Record, August 31.

1 *Metastatic Choroiditis Occurring in the Course of Pneumonia, Due to Grippe. Based on a Study of Six Cases with Two Autopsies. Charles Stedman Bull.
2 *Protozoal Life in the Blood of Man and Animals, and Some of Its Evolutionary Phases in the Bodies of Suctorial Insects. M. P. Overholzer.
3 *Suggestions in Infant Feeding. Charles Gilmore Kerley.
4 *The Clinical Aspect of Acute Intestinal Obstruction. Howard Lilienthal.
5 *Remarks on the Scientist, the Practitioner, and the Antitoxin Treatment of Diphtheria. Adolph Rupp.

American Medicine, August 31.

6 Two Cases of Injury to the Diaphragm by Puncture Successfully Treated by Suturing. Transdiaphragmatic Suture of the Liver and Kidney. Carl Schlatter.
7 *Disease and Sin. George M. Gould.
8 *The Operative Treatment of Saddle-Nose, with Two Illustrative Cases. Emanuel J. Senn.
9 *Pulmonary Tuberculosis as an Insurance Problem. Chas. Lyman Greene.
10 *The Value of Antitoxin in Diphtheria. Walter R. Greiss.
11 The Treatment of Neurasthenia. W. Blair Stewart.
12 Report of a Case of Purpura Hemorrhagica. A. Hymanson.
13 The Medical History of Dr. Samuel Johnson. W. C. Caball.

The Boston Medical and Surgical Journal, August 31.

14 The Treatment of Stricture of the Esophagus. Theodore Dunham.
15 *A Discussion of the Indications for Operation in Gastric Ulcer. Arthur T. Cabot.
16 *Cancer of the Intestine. Fred B. Lund.
17 *New Procedures in the Treatment of Hip Disease; Operative Dislocation and Drainage of the Acetabulum in Acetabular disease. E. H. Bradford.
18 An Apparent Case of Diphtheria Infection from Well Persons Carrying Diphtheria Bacilli. Franklin W. White.

Philadelphia Medical Journal, August 31.

19 *Sweat Baths and Baths that Increase Bodily Temperature. R. Friedlaender.
20 Traumatic Hysteria; Cranial Operation; An Interesting Pathological Condition: Recovery. Frank R. Fry.
21 The Use of Drugs in Pulmonary Tuberculosis. W. R. Huggard.
22 *The Inhalation of Formic Aldehyde as an Aid in the Open-Air Treatment of Pulmonary Tuberculosis. Crowry Muthu.
23 Slow Pulse, with Special Reference to Stokes-Adams Disease. Robert T. Edes.

New York Medical Journal, August 31.

24 *The Diagnosis, Etiology, Prophylaxis and Treatment of Cystitis, Pyelitis, and Pyelonephritis in Women. Thomas R. Brown.
25 *A Study of the Temperature, Pulse and Respiration in the Diagnosis and Prognosis of Certain Diseases of the Brain. J. T. Eskridge.
26 *The Esophagometer, or Intragastric Whistle—A New Device for Measuring the Length of the Esophagus in the Living. C. D. Spivak.
27 *Dupuytren's Contraction of the Palmar Fascia. Noble Smith.
28 *The Effect of Nasal Stenosis on the Throat, Ear and Organs at a Distance. W. Peyre Porcher.
29 *Atrophic Rhinitis in Its Purely Clinical Aspect. Carl Seiler.

St. Louis Medical Review, August 31.

30 Cutaneous Anthrax—Malignant Pustule—Report of Two Cases. J. M. G. Carter.
31 *Gastro-jejunostomy in Gastrectasis. A. H. Cordier.

Cincinnati Lancet-Clinic, August 31.

32 *Tracheal Injections. John A. Thompson.
33 Syphilis. George J. Monroe.

Medical News, August 31.

34 *Blood Examinations as an Aid to Surgical Diagnosis. Joseph C. Bloodgood, M.D.
35 *The Racial Factor in Hysteria. Julius Ullman, M.D.
36 The Drug Habit—Its Cause and Restrictions. Joseph M. Aiken, M.D.
37 Two Fatal Cases in Infants—Pemphigus and Erysipelas. Frank S. Meara, Ph.D., M.D.

Pacific Medical Journal (San Francisco), August.

38 Causes and Treatment of Habitual Constipation. Alfred W. Perry.
39 A Capital Sin of Modern Gonorrhea Therapeutics. V. G. Vecki.
40 *Medical Education in Japan. K. Ikeuchi.

Occidental Medical Times (Los Angeles), August.

41 *The Pathology and Bacteriology of Bubonic Plague. W. H. Kellogg.
42 The Surgical Treatment of Cervical Lymphadenitis. Charles G. Levison.
43 Puerperal Sepsis. John Life.

Charlotte Medical Journal, August.

44 A Case of Osteo-Arthritis of the Spine. Michael Hoke.
45 Chronic Interstitial Nephritis, with Report of an Atypical Case, and Autopsy. H. N. Rafferty.

Therapeutic Gazette (Detroit, Mich.), August 15.

46 *The Value of Veratrum Viride in Puerperal Eclampsia. J. Clifton Edgar, Richard C. Norris, Barton C. Hirst, Edward P. Davis, George M. Boyd, W. Reynolds Wilson, J. Whitridge Williams, and Edward Reynolds.
47 *The Use of Gelatin for Controlling Hemorrhage. Joseph Sailer.
48 *Remarks on the Use of Pilocarpin in the Treatment of Inflammations of the Interior of the Eye. Howard F. Hansell.
49 A New Method of Radical Cure of Hydrocele of the Tunica Vaginalis Testis. T. Hope Lewis.

American Practitioner and News (Louisville, Ky.), July 1.

50 *The President's Address, Kentucky State Medical Society. James H. Letcher.
51 Some Observations on Administration of Anesthetics. B. C. Frazier.

Johns Hopkins Hospital Reports (Baltimore), Vol. x.

52 Structure of the Malarial Parasites. Jesse W. Lazear, M.D.
53 *The Bacteriology of Cystitis, Pyelitis and Pyelonephritis in Women, with a Consideration of the Accessory Etiological Factors in these Conditions, and of the Various Chemical and Microscopical Questions Involved. Thomas R. Brown.
54 *Cases of Infection with Strongyloides Intestinalis (first Reported Occurrence in North America). Richard P. Strong.

Colorado Medical Journal (Denver), July.

55 The Necessity for Post-Graduate Instruction in Sanitary Science; Psychopathic Cults of Healing and Worship. William P. Munn.
56 Hysterectomy for Fibroid Tumor and Ventro-suspension of the Stump for Bladder Prolapse and Urinary Incontinence Due to Symphysiotomy and Extensive Laceration of the Anterior Vagina and Neck of the Bladder. H. G. Wetherill.

Medical Fortnightly (St. Louis), August 26.

57 Quackery. James E. Free.
58 Angioneuroses. Frank Parsons Norbury.
59 Diseases of the Stomach. (Continued.) J. M. G. Carter.
60 Diagnosis in Diseases of Infancy. John Zahorsky.
61 *The Relation of the Medical Editor to Original Communications. Harold N. Moyer.

Journal of Cutaneous and Genito-Urinary Diseases (N. Y.), September.

62 Six Cases of Bullous Dermatitis Following Vaccination, and Resembling Dermatitis Herpetiformis. John T. Bowen.
63 On a Case of Parakeratosis Variegata. T. Colcott Fox and J. M. H. MacLeod.

Canadian Journal of Medicine and Surgery (Toronto), September.

64 Address in Surgery, Maritime Medical Association. A. Primrose.
65 Pulmonary Tuberculosis: Its Treatment in Special Sanatoria. J. H. Elliott.
66 The Outdoor Treatment of Sick People. George H. Carveth.
67 The Relation of Nasal Obstruction to Obscure Cases of Asthma. Arthur W. Maybury.
68 A Rare Variation in Phalanges of Hands and Feet. Frederick Winnett.

Annals of Gynecology and Pediatry (Boston), August.

69 Address Delivered May 17, 1901, at the Annual Meeting of the New Hampshire Medical Society by the Retiring President, William T. Smith, M.D.
70 *Malignant Neoplasms. D. M. Currier.
71 Preventive Medicine. Loren A. Sanders.

Kansas City Medical Index-Lancet, September.

72 Hernia and Its Treatment—Reducible, Incarcerated and Strangulated. Herman E. Pearse.
73 Annual Address, North Missouri Medical Association. J. Franklin Welch.
74 Some Practical Points from My Experience in the Treatment of Diseases of Children. John W. Kyger.
75 Legitimate Proprietary Medicines. R. W. Gardner.
76 The Treatment of Acute Insanities. John Punton.

Medical Herald (St. Joseph, Mo.), August.

77 Legal Sanitation or Some Errors and Shortcomings of Attempted Medical Legislation. John D. Seba.
78 A Consideration of Some Methods of Treating Epilepsy. W. J. Alexander.
79 Epidemic Influenza. H. E. W. Barnes.
80 Some Neglected Symptoms of Non-Surgical Gynecology. John A. Hale.

Hot Springs Medical Journal, August.

81 Two Cases of Urethral Stricture. St. Cloud Cooper.
82 Tubo-ovarian Abscess, and How Best to Deal with It. Edwin Ricketts.

American Gynecological and Obstetrical Journal (N. Y.), August.

83 *Treatment of Puerperal Eclampsia. O. A. Gordon.
84 *The Treatment of Retroflexions of Mobile Uteri. George Gellhorn.
85 Indications for the Treatment of Posterior Displacement of the Uterus. Augustus P. Clarke.
86 *Operation for Cystocele. Emerson M. Sutton.
87 *Some of the Uses of Electricity in Gynecology. W. H. Walling.
88 *Gold-Beater's Skin Court-Plaster as a Dressing for Operative Wounds. Edgar A. Day.
89 *The Dry Method in Surgery. Edwin Walker.
90 Cancer of the Uterus. W. O. Henry.

Canada Lancet (Toronto), August.

91 Normal Vaccination. H. R. Frank.
92 A Case of Advanced Arteriosclerosis in a Child. Allen Baines.
93 An Anesthetic Chart. Charles O'Reilly.
94 The Bromid Sleep. Arthur A. Small.
95 A Peculiar Case of Mastoiditis. Chas. Trow.

The American Journal of Insanity, July.

96 *An Anthropological Study of the Small Brain of Civilized Man and Its Evolution. Chas. E. Woodruff.
97 Presidential Address, Delivered at the Annual Meeting of the American Medico-Psychological Association, Held at Milwaukee, Wis., June 11-14, 1901. P. M. Wise.
98 Cerebral Hemiatrophy in an Adult, with Hemiplegia and Aphasia. A. L. Harrington and W. L. Worcester.
99 *Dispensary Treatment of Mental Disease. Walter Channing.
100 *A General View of Dementia Precox. Albert E. Brownrigg.
101 *Experience with Chloretone. Wm. Rush Dunton, Jr.
102 *Schools for the Insane. Francis M. Hamlin.
103 A Statistical Study of One Thousand Patients. Frederick L. Hills.

Clinical Journal (Chicago), September.

104 Fracture of the Humerus; Fracture of the Femur; Strangulated Inguinal Hernia. Edward H. Lee.
105 Clinical Lectures Upon the Etiology, Pathology, Diagnosis and Treatment of Tumors. A. H. Levings.

AMERICAN.

1. **Metastatic Choroiditis.**—The disease, as presented in the six cases here reported, is characterized by pain in the head and eyes, intense vascular congestion, and the usual symptoms of choroiditis and irido-choroiditis, and results in a rapid and total loss of sight. Severe headaches and fever may precede it, and the intraocular tension is at first increased, but subsequently sinks much below normal, even when no perforation of the eye-ball occurs. The course of the disease is from three to six weeks, and the prognosis is always bad, the case ending in total blindness with sunken eye-ball. Enucleation is not advisable in the acute stage, especially if Tenon's capsule and the orbital tissues are involved. Bull discusses the theories of this metastasis, especially referring to Goh's article on the subject, and he doubts whether the occurrence of metastatic ophthalmia signifies a particularly severe type of the general disease causing it, since as a symptom it has not the prognostic significance for the original condition that would, in such cases, be expected.

2. **Protozoal Life in the Blood.**—Overholzer reviews the various facts in regard to the appearance of the lower forms of animal life in human and other blood, with special reference to malaria. He makes the practical point that in his section of the country, the so-called intestinal colic of babies under six months and older, is often more benefited by quinin than by all the food modifications or remedies that have been suggested. He has no doubt but that in these cases microscopic examination of the blood would show the true etiological factor of the condition.

3. **Infant Feeding.**—The subject of infant feeding is discussed by Kerley, who criticises the use of set formulæ, as they do not make distinction as to the food strength in different seasons of the year. In the hot months the infant's digestive capacity is lessened. There is but one substitute for breast milk, and that is cow's milk, and the important point is to combine it in such a manner as to give the strength of fat, sugar and proteid normally found in mother's milk. He says: Beginning with the feeding of the child at birth, for the first three days one-half per cent. of sugar-water mixture is given; after the third day a milk mixture containing 1. of fat, .4 proteid, 4.5 sugar; after the tenth day 1.5 fat, .7 proteid, 5. sugar; after the twenty-first day 2. fat, .8 proteid, and 5. sugar. The increase is very gradual, so that when the average child is six months old he will receive .3 to 3.5 of fat, 1. to 1.5 of proteid, and 7. of sugar. A very weak strength is given at first, which is increased if the child thrives. The baby is weighed every two or three days, and the stools are examined daily for signs of indigestion. The fat, proteid, and sugar are independently increased or diminished as may be indicated by the stools and the condition of the patient. When this method of low feeding is followed at birth, it is, with very few exceptions, followed by success. The usual error is in beginning with too strong a mixture, and in inattention to the case. For aiding in the digestion of casein, two methods have their advocates. One is the peptonizing of the milk, and the other the use of cereals. The former in his hands is of no value except when completely peptonized milk is introduced directly into the stomach or rectum. Partially peptonized milk is an impossibility. Cereals he finds valuable as diluents and for the nutrition they furnish, but he has never been able to increase the proteids in a case of proteid incapacity. He gives details of the management of difficult cases and reports two cases of the rare condition of idiosyncrasy where cow's milk can not be borne at all.

4. **Intestinal Obstructions.**—This not infrequent condition is treated of by Lilienthal, who attributes part of its increase to the increased frequency of abdominal section, but thinks also that true ileus is often due to appendicitis. He cautions against mistaking the expulsion of air introduced by enema for the expulsion of flatus and suggests that the physician himself conduct the administration of the enema for this reason. Sudden abdominal cramp-like pain with vomiting but no fever, should be treated by enema and in the adult by a small dose of morphin (Treves). If permanent relief does not follow, the case is a suspicious one, and operation is indicated. The medical treatment of intestinal obstruction is safe no longer than until the diagnosis is made. After that, the earlier the operation, the better the chances. Some interesting recoveries, however, have been reported with the use of atropin, which may have its utility as an antispasmodic, and a tonic in paralytic obstruction. The suggestion of Vidal of the serum treatment is mentioned, but Lilienthal thinks that its utility must be limited to cases where operation has been already performed, and the symptoms have not subsided. This treatment should never supersede surgery. He advises washing out the stomach before the operation, and in desperate cases abstinence from general anesthesia. The incision should be small at first, and enlarged if necessary. If strangulation exists, it must be relieved before the patient leaves the table, and the possibility of more than one obstruction should be kept in mind. Enterostomy or colostomy should be performed when a prolonged operation would entail the gravest danger of death. In making an artificial anus, one must be sure that the opening is above the occlusion. Gangrenous intestines must be at once resected. When there is great distension of the small intestines, a number of small incisions opposite the mesentery should be made for evacuation of the gut, before searching for the obstruction. The author has practiced this for four years, and feels justified in continuing it. There is rarely, if ever, any advantage in the administration of a cathartic after the strangulation has been relieved. Surgery, and surgery alone, he believes can logically furnish relief in acute intestinal obstruction.

5. **Antitoxin.**—Rupp's article is an unfavorable criticism of the antitoxin therapy, which, he thinks, has a very limited utility.

7.—See Journal, July 7, p. 135.

8. **Saddle-Nose.**—E. J. Senn prefers an external excision in the treatment of saddle-nose, refracturing the bones at a definite point, and removing any excess of callus in traumatic cases. He advises the following operation: A vertical excision one and a half to two inches in the middle line of the nose over the depression, carefully dissecting back the skin and soft structures. With a narrow chisel, the nasal bones are frac-

tured at the point where they join the nasal process of the superior maxillary, care being taken not to injure the mucous membrane. A Kocher director, covered with gauze, is now passed into each nostril alternately, the fragments mobilized and the nose molded into the proper shape. A straight needle, armed with a medium-sized silver wire, is passed through the nose transversely underneath the fragments. Lead discs are placed at each end. The wire is tightened and fixed on the discs, thus supporting the fragments, and also narrowing the nose to any desired degree. He suggests the use of cork instead of lead to avoid pressure necrosis. Next, rubber tubes of the desired caliber are placed in the nostrils to facilitate breathing and to act as an intra-nasal splint, retained by adhesive strips fastened to the cheek. A plastic splint is made to conform the new bridge, with hygroscopic gauze and plaster-of-Paris, molded to the nose and held there until it sets. It should reach from the root of the nose to the lower border of the nasal bones, and should be retained by adhesive strips. After the operation the patient should be watched carefully, the tubes frequently removed and the cavities cleansed. The silver wire should be removed at the end of five or six days, the tubes and casts in fifteen to eighteen days. He gives illustrative cases showing the success of the operation.

9. **Pulmonary Tuberculosis in Life Insurance.**—The following conclusions are offered by Greene: 1. The present requirements of a majority of our insurance companies and the usual methods of insurance examiners are not sufficient to exclude persons suffering from incipient or arrested tuberculosis. 2. Improper preparation of the patient is a fertile source of error, and should be covered by specific instructions and direct inquiry, as is now done in but few instances. 3. Light weight in an applicant should lead to a careful scrutiny in every case, and suggests an afternoon appointment for temperature determination. Many accepted as sound light weights are actually cases of incipient or arrested tuberculosis. 4. Heavy weights can not be accepted at their face value. 5. Recent loss of weight is suggestive and important. It is important that the "best" weight should be stated. No blank known to the writer contains the latter inquiry. 6. Hoarseness should arouse suspicion, and be met by postponement until recovery. 7. The determination of the body temperature is extremely important and its present neglect inexplicable. 8. The physical signs of tuberculosis are obscure and require skill and judgment, both in their detection and the weighing of their importance. The proper attitude, viz., demonstration of the normal, greatly simplifies matters. Hence: 9. A knowledge of the normal chest is all important. 10. Unilateral hyperresonance is as important as unilateral dulness, and absence of the normal breath sounds no less significant than the presence of abnormal sounds. 11. Broadly speaking, the examiner must rely more upon auscultation than percussion. No one sign available to the insurance examiner is pathognomonic, and hasty conclusions are deplorable and disastrous. 12. The tuberculin reaction and demonstration of tubercle bacilli in sputum are impracticable measures, save in the case of substandard lives. 13. Greater stress should be laid upon the question of direct infection, and specific questions in relation to environment should be inserted in every medical blank.

10. **Antitoxin in Diphtheria.**—The subject of antitoxin and its value in diphtheria is noted by Griess, who offers the following in conclusion: 1. Antitoxin should always be given as soon as the diagnosis is made with certainty. 2. Children require larger doses, as their natural resources for fighting disease are always less than those of adults. 3. In mild cases of diphtheria 2000 units should be given as an initial dose, and if no improvement takes place within 12 hours, it should be repeated. 4. All laryngeal cases, or cases in which prostration is severe, should have 4000 units as an initial dose, and 2000 units in 8 or 12 hours if there is no marked improvement. 5. Intubation in children should be practiced before the child becomes exhausted, and if it is not successful, no time should be lost in making a tracheotomy. Before performing either of these operations, however, a stimulant should be administered as the shock during these operations is very great. More than one child has been saved by a hypodermic injection of ether, injected when the patient was apparently dead, after the trachea had been opened; this, together with artificial respiration, caused the child to soon show signs of life. 6. The results to be expected from antitoxin depend especially upon two things: When used in the course of the disease (late or early), and in what type or class of cases it is employed.

15. **Gastric Ulcer.**—Cabot reviews the surgical treatment of gastric ulcer and its present status, which he states as follows: 1. Acute hemorrhages should rarely be treated by operation; the results of interference have not been good, while the results of medical treatment have been satisfactory. When, however, a hemorrhage frequently repeats itself, even if severe in amount, it will demand operative treatment as soon as its recurrent character is plain. 2. Small, frequent hemorrhages, threatening anemia, give a clear indication for operation. 3. Perforation of the stomach, either acute with general peritonitis, or chronic with surrounding adhesions and perigastritis, demands instant operation. 4. When an ulcer runs a chronic course with a strong tendency to recurrence, and gradually diminishes the patient's capacity for work and for the enjoyment of life, an operation is indicated, especially when the patient is so situated as to be dependent on his daily work for support and unable to closely regulate his diet.

16. **Intestinal Cancer.**—The operations indicated for intestinal cancer are stated by Lund as follows: Operation is indicated absolutely in all cases in which the tumor is suspected of being a cancer of the intestines after careful eliminative diagnosis. If a benign tumor or obstruction is found, so much the better. It is also indicated when the symptoms point to the possibility of stenosis, whether it is palpable or not. Exploratory operation is indicated whenever vague intestinal symptoms, associated with a loss of weight, in persons past middle life suggests intestinal cancer. Exceptions should be made of cases of general peritoneal metastases, hepatic cancer, etc., where no radical operation can be performed, and only palliative measures are suitable. In regard to the nature of the operation, this has to be determined in each individual case. Excision of the growth and immediate union of the ends of the bowel is the ideal.

17. **Hip Disease.**—A case of acetabular disease of the hip, in which amputation of the joint seemed indicated, but was refused, was treated by Bradford by throwing the head of the femur out of joint by an incision similar to that for excision and placing it on the dorsum of the ilium. A free incision was made, allowing drainage from the acetabulum, which was found perforated. A celluloid drainage tube one inch in diameter was inserted to a sufficient depth and secured by a stitch. The base of the acetabulum was touched with carbolic crystals and washed off with alcohol. The limb was fixed in flexion and adduction by a plaster-of-Paris spica. Marked improvement followed. Drainage was kept up for six months, and then the boy was allowed to go about. The tubercular osteitis of the acetabulum has been healed and a future operation may correct the present deformity.

19. **Sweat Baths, Etc.**—Friedlander has experimented on himself and others with various forms of sweat baths, and baths that increase bodily temperature, such as the Russian steam bath, and gives the indications for either variety as follows: He prefers [illegible] baths. 1. In combating infectious an[illegible] acute and subacute diseases due to exposure, catarrh of the upper respiratory passages, fresh rheumatic affections of the muscles and joints, and also in other infections, the onset of which is not characterized by high fever and in which individual conditions render an increase of the fever permissible and desirable for the course of the pathological process. Furthermore in syphilis, and in a general gonorrheal infection. 2. When an intense increase of metabolism is indicated from other causes, such as autointoxication, and in conditions affecting metabolism, like gout.

On the other hand, he favors sweat baths: 1. When a cure by means of free diaphoresis is contemplated; in exudations and transudations, in nephritis with edema, in hydremia and chlorosis, in metallic poisoning, and in obesity as an adjunct to other methods of treatment. 2. When chronic inflammatory processes are to be influenced by peripheral hyperemia. In chronic and especially rheumatic affections of the muscles, joints and nerves, in the residual conditions of acute articular rheumatism, in chronic muscular rheumatism and arthritis deformans, in neuritides, and in tubercular arthritic affections.

22. **Formic Aldehyde in Tuberculosis.**—Formic aldehyde has been employed by Muthu in two ways, by the dry method, in which the tabloids are placed over a methylated spirit lamp and volatilized, and the moist method, in which, together with this, there is steam mixed with the formaldehyde vapor, rendering it more diffusible and efficacious. The gas is used either by suffusion throughout the atmosphere, or when in the aqueous solution, it is employed in an inhaler or nebulizer. He has used it with 15 patients from three to five months. Five, all men, were completely cured; seven, six men and one woman, were almost cured, that is, though the symptoms did not completely disappear, and a few bacilli remained, they have been able to go back to their former occupations. and have been in good general health; one, a woman, was slightly benefited, and in the remaining two there was no effect. Of the five who were completely restored, three had affection of one lung, one had a large cavity in one lung, and the other had marked signs of breaking down in both lungs. Of the seven nearly cured, two had cavities in one lung, and consolidation of the other; one had empyema complicating pulmonary tuberculosis, and the rest had more or less extensive affections of both lungs. He believes that the treatment should be given a fair trial in every sanitarium, systematically and persistently used by some one who is careful and enthusiastic.

24. **Cystitis Pyelitis and Pyelonephritis in Women.**—From a study of the pathology, bacteriology and symptoms of cystitis, pyelitis and pyelonephritis in women Brown comes to the following conclusions: 1. The great majority of cases of pyelitis, pyelonephritis, and cystitis are due to infection with various micro-organisms (of which the colon bacillus is the commonest) which may reach the kidney or bladder either exogenously or endogenously. 2. In the majority of cases the condition either can be prevented or can be cured if the conditions underlying its development are recognized and understood, and the correct measures inaugurated. 3. There are various conditions, such as urinary hyperacidity, which may simulate almost exactly true vesical infections, and yet in which misinterpretation and improper treatment may lead to the development of a true cystitis and its deplorable consequences. 4. In no condition is prophylaxis more essential than in that of the infections of the urinary tract, while to be able to prevent such conditions, we must have constantly before us the danger of the development of infection in all cases associated with conditions which tend to lower the general resistance of the patient, and also those which render the bladder susceptible to infection, especially by the trauma of an operation or catheterism. 5. While an absolute diagnosis of renal infection can be made only by ureteral catheterism, in the majority of cases a very probable diagnosis may be arrived at by a consideration of the relation between the grade of albuminuria and pyuria and by careful cystoscopic examination of the bladder, especially that portion about the ureteral orifices, and the character of the urine *flowing therefrom*. 6. Contrary to the opinion expressed in the majority of textbooks, a great majority of the infections both *of the bladder* and of the kidney are associated with acidity of *the urine*—that is, are due to micro-organisms which do not split up the urea. 7. Probably *in the* majority if not in all the cases of renal infection due to a urea-decomposing micro-organism, after the condition has lasted for a certain length of time, a stone is formed by the decomposition of the precipitated salts about the bacteria as a nucleus. 8. To be able to thoroughly understand the cases of cystitis, pyelitis, and pyelonephritis, to make the proper diagnosis to inaugurate and carry out a rational line of treatment, to be conversant with the proper means of prophylaxis, and to give a correct prognosis, a careful chemical, microscopical, and bacteriological study of the urine is absolutely essential. See also 53.

25. Eskridge's article is to be continued, and will be noted later.

26. **Esophagometer, or the Intragastric Whistle.**—After first noticing the variations of the estimates of the length of the esophagus and the position of the cardia, which are quite noticeable, Spivak gives his reasons for assuming a practical value in ascertaining these data. It is important to know how much rubber tubing should be allowed to enter the stomach in severe gastric lesions, and the diagnosis of gastrectasis and gastroptosis largely depends on the proper location of the cardia. He then describes his instrument, which consists of a stomach tube, provided at the proximal end with a whistle, which is inserted in such a way that the opening through which the air is blown in looks towards the distal end, and the opening at which the air makes its exit is in apposition with the side opening of the tube. The tube is introduced into the esophagus and air blown in. As long as the whistle traverses the esophagus, no sound is heard, but as soon as the cardia is reached, a distinct whistle is heard. In this way the exact length of the esophagus is ascertained. The advantages of the device are given as follows: 1. Precision in measurement not attainable by any of the other methods, except by that of Purjesz. 2. Cheapness. The materials necessary for manufacturing this instrument are a stomach tube, whistle, and a piece of thread. It does not take more than two minutes to insert and secure the whistle in the tube. 3. No special instrument is needed. It is an esophagometer only when used for the purpose of esophagometry. In the twinkling of an eye the component parts are separated and the stomach tube and whistle are ready for other uses.

27. **Dupuytren's Contraction of the Palmar Fascia.**—Noble Smith discusses the etiology of Dupuytren's contraction, and reports a case in which he believes he observed it in its very early stages. In a man aged fifty a small nodule developed subcutaneously at the base of the ring finger on the left hand. The first symptom was pain, and was followed by the characteristic slight contraction of the palmar fascia. There was no history of gout in the family, but a slight tendency to muscular rheumatism and to bilious attacks, so-called. A full dose of Pil. cathart. comp. U. S. P. was given, followed by relief of the pain and subsidence of the nodule. After several repetitions of the treatment it entirely disappeared and there has been no apparent tendency to recur.

28. **Nasal Stenosis.**—Porcher calls attention to the varied symptoms from nasal stenosis, and reports several cases of cough, deafness, abscess of the ear, etc., apparently relieved by nasal operation. He also refers to still more extraordinary reflex phenomena reported by Schiff and Gomperz, already abstracted in The Journal.

29. **Atrophic Rhinitis.**—From his studies on the subject Seiler finds atrophic rhinitis most frequent in American-born males of Irish parents, next in Irish born, then Italian born, French and German, while the smallest contingent is furnished by the negro race. He also finds that occupation seems to have very little to do with its occurrence, excepting in special case of employes working in chemicals. The treatment which he finds best has been the removal of the dried secretions by gradual solution and loosening with liquid solvent, to which should be added some of the ethereal antiseptics, the formula for which is embodied in the Seiler antiseptic tablets. After removing the scabs and ozena, he employs the Goldstein cotton nasal plug, with the nitrate of silver and stearate of zinc.

31. **Gastrectasis.**—The deductions which Cordier draws from the study of the operative treatment of gastrectasis are, that cancer of the pylorus, even though removed, returns quickly, and is always fatal and that pylorectomy is attended

by high mortality and is not a justifiable procedure in advanced pyloric carcinoma. Gastrectasis, due to a malignant closure of the pylorus, is best treated by gastro-jejunostomy, according to Woelfler's or Von Hacker's method. It is not necessary to twist the bowel in making the anastomosis to prevent the bile from entering the stomach. The anastomotic opening in the stomach should be at the most dependent point of the dilated organ. The operation is attended by a low mortality, and should be performed whenever marked dilatation of the stomach, with emaciation, pain and invalidism is present. Relief follows at once, and the patient gains in weight, and, if no malignant disease is present, is restored to former health.

32. **Tracheal Injection.**—Thompson has found special benefit from tracheal injections and has come to use them largely in his practice. The technic is as follows: The larynx is illuminated as usual. The patient holds his own tongue while the physician guides a properly curved laryngeal syringe back over the glottis. Then, while the patient takes a slow full inspiration, the medicine is injected between the cords and into the trachea. It is not necessary to touch any part of the larynx, and if the patient will follow directions, the operation is easy. It is only with a few who have very little self-control that this method is impossible. The advantages are the direct local action of the medicine, and its quick constitutional effect from being injected directly into the lungs. It also undergoes no chemical changes before it reaches the spot. He advises this method in the late stages of bronchitis, in chronic bronchitis, asthma, pulmonary emphysema and chronic inflammation of the trachea. The most effective medicines are those that are volatilized slowly by the temperature of the body, such as menthol, camphor, creosote and guaiacol carbonates and chlorophenol. He says the longer he employs the method, the greater is his opinion of its value.

34. **Blood Examinations.**—The value of blood examinations in surgical diagnosis, the leucocytosis of shock, and the necessity of a careful blood examination before general anesthesia are first noted by Bloodgood. The blood-count may enable us to detect and gauge a hemorrhage, and he finds that the dangers from an anesthetic are greatly increased with a hemoglobin estimate below 50 per cent. There is need of more study as regards post-operative leucocytosis; a sudden rise may indicate complications. The most certain value is in the early recognition of intestinal obstruction, in which there is always a rise of usually over 20,000. In a few cases of post-operative phlebitis there was a rise in the leucocytes ranging from 15,000 to 20,000. This has been frequently observed in typhoid phlebitis, but, on the whole, the observations of the changes in the leucocytes after operation are not well established. The principal theme of the paper, however, is the importance of the leucocyte-count in the early recognition of acute abdominal lesions, *appendicitis, etc.* A tabulated statement of the counts in different phases of the conditions, acute, chronic, abscess, etc., is given and several cases illustrating certain points are reported in detail. While there is need of more observations before definite conclusions can be reached, these are enough to make a careful surgeon insist on a blood-count in every case of acute abdominal lesion, and even every four to six hours during the first two days. He says, "A rapid rise in the leucocytes, especially above 18,000, should be a sufficient indication for exploration, even in those cases where the local symptoms are very slight. In the few exceptions in which the local symptoms are sufficiently distinct to indicate an operation, a low leucocytosis should not influence as to delay operation." The article concludes with remarks on the leucocytosis of intestinal obstruction and cholecystitis, in both of which there is a significant rise.

35. **Hysteria.**—Ullman recognizes a special susceptibility to hysteria in certain races, especially the Jews; the Latins and Slavs are also to be regarded as hysterical. It appears to be frequent in the negro, and under civilization is appearing in the North American Indians. He concludes that no race is free and its greater frequency in some is attributable rather to environment than to special racial peculiarity.

40. **Medical Education in Japan.**—The medical universities of Japan are described by Ikeuchi. The medical education is given in that country by the Tokyo and Kioto Imperial universities, the medical departments of the high schools in five provinces, the Kioto, Osaka, and Aichi provincial medical schools, and two private medical colleges. Besides these are the Naval and Army medical academies in Tokyo, which do not educate the student, but instruct the surgeon-probationers and surgeons who are put on service out of easy reach of the scientific world. The first two are government institutions with a medical course of four years, ample clinical advantages and post-graduate courses. The medical departments of the five high schools differ more or less. They also have four-year courses. He gives a summary of the physicians at present in Japan: 1. Graduates of the universities, 1514, with the title of Igakushi. 2. Graduates of the higher schools, 2329, with the title of Tokugyoshi. 3. Graduates of Saisei and Charity Hospital Medical Schools, 10,779, with the title of Eishi. 4. Those qualified in foreign medical schools, 94. 5. Practitioners before the present regulations went into force, and who received license without examination, 21,940. The first four classes are physicians who were educated under modern systems; the rest are Chinese physicians, including bonesetters, shampooers, administerers of acupuncture, etc. Therefore, in Japan, as he says, many physicians are really ignorant of modern medicine, and better medical education in Japan is demanded.

41. See abstract in Journal, xxxvi, p. 1491.

46. **Veratrum Viride.**—This article is given up to the replies that have been received by the editor of the *Therapeutic Gazette* from various prominent obstetricians as to the value of veratrum viride in puerperal eclampsia. J. Clifton Edgar believes it invaluable in cases where we have to use temporizing means until we can secure dilatation of the cervix. It is second in efficiency only to chloroform. It diminishes the pulse rate and convulsions are almost unknown when the pulse is 60 or under. He gives 10 to 20 minims of the fluid extract or one-half that quantity of Norwood's tincture subcutaneously, and repeats until the pulse continues below 60 to the minute, keeping the patient in the recumbent position. Richard C. Norris finds that the cases suitable for veratrum viride are those in which bleeding is often indicated. It can be employed sometimes when bleeding is not possible. A knowledge of the proper dose is essential. He nearly lost a patient from a hypodermic dose of 20 drops of the fluid extract. Smaller doses at frequent intervals are better, the interval being determined by the effect produced by the drug. Beginning with an initial dose of 8 minims he has repeated the administration in 5 minim doses as soon as the effect of the first dose did not appear in fifteen minutes or had begun to pass off. Barton C. Hirst has employed it for some twelve or fifteen years and has great confidence in its efficiency. It is most valuable in asthenic conditions; he would not use it in asthenia. Edward P. Davis expresses a similar opinion. Drs. George M. Boyd, W. Reynolds Wilson, Whitridge Williams, and Edward Reynolds have either had very little experience with it or consider it of slight value or even dangerous. Dr. Wilson thinks that it may possibly interfere with active uterine contractions which are Nature's means of removing exciting causes of convulsions.

47. **Gelatin in Hemorrhage.**—As a result of an analysis of the literature Sailer thinks the following conclusions are reasonable: 1. Gelatin increases the coagulability of the blood, whether applied locally, taken internally by the mouth, or injected subcutaneously or intravenously. 2. Applied locally it is usually harmless, and may, as Carnot suggested, aid in healing by improving the nutrition of the cells, although he regards this as doubtful. It may be injurious by promoting bacterial growth, and should probably always have some antiseptic added to it. 3. Injected subcutaneously or intravenously it is entirely harmless, and when the technique is perfect, practically painless. The solution should be thoroughly sterile; the dose employed should vary from one to three

grams of pure gelatin. 4. When administered by the mouth from 1 to 300 grams or perhaps more, should be employed daily. 5. It is of advantage in any form of local hemorrhage, such as epistaxis, hemorrhoids, or injuries. 6. It checks certain forms of internal hemorrhages such as hemoptysis, hematemesis, metrorrhagia, melena neonatorum. 7. It appears to be the best remedy at our command in the treatment of hemophilia, and to be of great advantage for purpura hemorrhagica, and in hemorrhagic forms of infectious disease. 8. At present it appears to be contra-indicated in only one condition, viz., acute nephritis.

48. **Pilocarpin in Eye Disorders.**—Hansell finds the effect of pilocarpin is of value in certain cases of inflammation of different structures of the eye. His method is as follows: A convenient hour is chosen, usually 3 p. m., and the patient is put in a hot bath ranging from 106 to 110 F.; during the bath he drinks a cup of tea. After twenty minutes immersion he is put into bed and receives a hypodermic injection of 1/12 to 1/8 of a grain of pilocarpin muriate. The sweating begins in a few minutes and is encouraged by hot bottles and blankets for two hours or more. If it should become slight or insignificant during the two hours, a glass of ice water is given, when the glands take on renewed activity. After the sweating, the wet blankets are removed, clean bed clothing substituted and the patient is allowed to remain quietly in bed until the next morning, when he may get up and dress until time for the next bath. If exhaustion follows the bath, a hypodermic injection of strychnin is given one-half hour before the next bath. The diet should be largely fluid and whatever local eye treatment is called for, is of course, administered and is not interfered with by the sweats. He refers to a number of cases in his practice and suggests that his own experience and that of some others who have tried it. has been so favorable that he feels he can recommend it in all chronic deep-seated inflammations of the eye that are not amenable to the usual remedies.

50.—See abstract in The Journal, xxxvi, p. 1725.

53. **Cystitis, Pyelitis and Pyelonephritis in Women.**—From a study of the results obtained in his investigation, Brown concludes: 1. The direct cause of the infection of the urinary tract in women is the invasion and multiplication of some form of micro-organism. 2. The commonest cause of these infections is the B. coli communis, which a consideration of the cases of acute cystitis definitely proves can and does in a large number of cases set up a true infection without the aid of any other micro-organism. 3. Marked variations are seen in the virulence of this micro-organism and in its pyogenic properties. 4. Other micro-organisms frequently found are the tubercle bacillus, various staphylococci and the B. proteus vulgaris; while numerous varieties of micro-organisms have been less frequently and occasionally met with, as the B. pyocaneus and typhoid bacillus. 5. The proportion of cases of infection due to the B. coli communis is greater in women than in men, probably due to the close proximity of the female urethra to the anus. 6. Besides the entrance of the micro-organisms, other factors are in most cases essential to the development of a cystitis; chief among these factors are anemia, malnutrition, trauma and pressure upon the bladder, congestion of the bladder and retention of urine. 7. In cystitis the chief mode of infection is by the urethra, although one must also consider as possibilities a descending ureteral infection from an infected kidney, pyogenic metastasis by means of the blood and lymph currents, and direct transmission of the micro-organisms from the intestinal tract, or from some adjacent focus of infection. 8. In pyelitis and pyelonephritis the usual modes of infection are along the ureter from an infected bladder, and by means of the blood and lymph currents; in the author's cases these modes of infection were found about equally represented. 9. In the great majority of cases of cystitis, both acute and chronic, and in the majority of cases of pyelitis and pyelonephritis, the urine is acid. 10. In the cases in which the urine is ammoniacal, the infection can be produced without the aid of any of the accessory etiological factors mentioned above, the irritation of the ammoniacal urine apparently being sufficient to render the bladder susceptible to infection. 11. In the case of infection of the kidney due to urea-decomposing micro-organisms, a stone is very likely to be present if the case is at all chronic. 12. Certain conditions exist which present most of the symptoms of cystitis but no infection; the most difficult of which to diagnose is probably urinary hyperacidity of neuropathic origin, the successful treatment of which depends upon the successful recognition both of its urinary features and its general basis. 13. Although the diagnosis of renal infections can be made with absolute certainty only by ureteral catheterization, a probable differentiation between renal and vesical infections can be made by a careful study of the urine alone. 14. Tuberculous infections of the urinary tract frequently occur with no other demonstrable tuberculous lesions elsewhere in the body. Probably a tuberculous gland would be demonstrable postmortem in most of these cases. 15. The colon bacillus seems to be the commonest cause of pyelitis, while the B. proteus vulgaris and members of the staphylococcus group are also found less frequently. 16. And finally, to be able to thoroughly understand the cases of cystitis, pyelitis and pyelonephritis brought to our notice, to make the proper diagnosis, to inaugurate and carry out a rational line of treatment and to give a correct prognosis, a careful chemical and bacteriological study of the urine is absolutely essential." See also 24.

54. **Strongyloides Intestinalis.**—Strong reports cases of dysentery with ulcer of the large intestine and abscess of the liver and retroperitoneal abscess in which there was an intestinal infection of the strongyloides intestinalis. The kidneys were degenerated and the liver, also the heart muscle. A thorough postmortem examination was made, and a description of the parasite is given with a historical review of the literature in the pathology. From a study of the microscopical sections of two fatal cases and from observations made upon five clinical cases he cannot consider the parasite harmless, nor does he regard it as a direct danger to man. He believes that it can produce an intermittent diarrhea with intestinal disturbances, and anatomically, a catarrh of the small intestine. The parasite certainly causes some injury from its rapid mechanical movement, but whether it produces any chemical substance harmful to man has yet to be proven. Moderately severe infections probably cause only slight injuries. The milder cases of infection generally yield to large doses of thymol, with general tonic treatment. It may be necessary to repeat the treatment at intervals. In very severe infections neither male fern nor thymol are of any apparent value in curing the disease and ridding the patient of the parasite.

61.—This article has appeared elsewhere. See The Journal of August 10, title 60, p. 406.

70. **Malignant Neoplasms.**—Currier favors the non-surgical treatment of cancer, pointing out that many cases treated by quacks recover. He has watched them for years. He resolved to know the value of these methods so he has been studying general and local medication. For the general medication to assist nature in her endeavor to relieve herself, he believes in the free use of phosphates, protonuclein, thyroid extract, the iodids to stimulate glandular activity, which in many cases is the most important thing to do, Chian turpentine, which he thinks has good results when properly administered, phytolacca, sulphur, echinacea, and conium. For local treatment he believes that electricity will be an agent of great value, though it has failed in private practice. Cataphoresis is opening up a field of vast possibilities. Arsenious acid, which has been much used, is an excellent thing, though quite painful unless prepared with some local anesthetic, such as cocain or eucain B. Chromium chlorid should be used in cases of scirrhus situated deep in the cellular tissue with the skin intact. It has the same selective action as arsenious acid when the strength is properly regulated and its action can be guided in any direction. It is best to commence by removing the cuticle over the most prominent part, and he says one who has never tried it would be surprised to see how quickly the tumor contracts and how smoothly it separates

from the parts around. Salicylic acid with lactic acid makes a desirable application for disease on the accessible mucous surfaces other than the mouth. It must be applied freshly prepared each day. If persevered in it will cause the diseased mass to separate in from five to ten days. He reports good results with formalin. As soon as the line of separation commences it should be filled in once or twice a day with protonuclein special. Eucain B. or cocain is the best local anesthetic where there is pain. The general edema being so great that no tumor can be discovered, he uses resorcin and phytolacca ointment which soon outlines the growth. He reports three cases, one of epithelioma, the second and third of cancer of the breast, and the second with enlarged axillary glands, in all of which there was good recovery.

83. **Puerperal Eclampsia.**—The remedy here recommended for puerperal eclampsia is veratrum viride with which Gordon has treated four cases, all of which recovered. In no case was there a convulsion where the pulse was held below 60. In the most recent case there were six convulsions before veratrum viride was used, under the administration of chloral, chloroform and morphin, while 10 minims of fluid extract of veratrum hypodermically brought the pulse down to 50, made it soft, and convulsions ceased. The uterus was emptied in all of these cases out of regard for the general opinion of the profession, and not from a lack of confidence in the medication. He holds that there is ground for some conservatism in this matter when we consider the twenty-six successful cases thus treated by Dr. Newton without interference with pregnancy. He thinks 10 minims the proper initial dose, with 5 minim doses at intervals of one-half hour until the pulse comes down to 60 or below. It is not often necessary to give a second dose, as the first is generally efficient.

84. **Retroflexions.**—Gellhorn recommends a method of vesico-fixation invented by Mackenrodt in 1895 for retroflexion of the mobile uterus and describes the operation. For the details of this the reader is referred to the article. A number of cases are reported. The advantages claimed are the restoration of the physiological situs in the pelvis as much as possible. The peritoneum being shortened by loosening up the bladder and sewed high up to the fundus on a line between the tubes, and a serous connection between uterus and bladder being thus established. The second part of the operation consists in sewing the vesico-vaginal septum to the anterior surface of the womb, thereby the bare posterior wall of the bladder becomes attached to the anterior wall of the uterus, which is covered with peritoneum, thus forming a sero-fibrous connection, sufficiently strong to hold both organs in place, but not so rigid and unyielding as to interfere with the development of the womb in case of a later pregnancy.

86. **Cystocele.**—In Sutton's operation "the incision is made around the cervix extending to the lateral sulci, forming the base of a triangle the apex of which is at the meatus, the sides of which take in sufficient of the anterior wall when edges reunited will completely retain the superimposed bladder; denudation made as one flap. Amputation of the cervix, or repair of the cervix, as the case may require, being performed at the time of the first incision, and dissection of the tissues from the anterior surface of the cervix sufficiently to allow the easy repositing of the uterus. Sutures introduced in front of the cervix may be continuous catgut or interrupted silk as the surgeon desires. Buried sutures not necessary, wound closed; result is a lengthening of from two and a half cm. of the vaginal wall with repositing of the cervix into the hollow of the sacrum, where it properly belongs, out of the reach of the patient who usually informs me after the operation that she can no longer feel the womb. This operation, of course, being supplemented with repair of the posterior wall of the vagina and perineum. When performed in this manner suspension of the uterus or shortening of the round ligaments intra-abdominally can be dispensed with, as the organ assumes its natural position in consequence of the lengthening of the anterior vaginal wall." He has performed this operation a number of times, and the results are uniformly as stated.

87. **Electricity in Gynecology.**—Walling recommends the use of electricity by galvanization, faradization and static spark in amenorrhea, dysmenorrhea, ovarian neuralgia, delayed menstruation, erosions, metritis and endometritis, pyosalpinx, subinvolutions and fibroids.

88. **Gold-Beater's Skin Court-Plaster.**—Day recommends gold-beater's skin court-plaster as having the following advantages as a surgical dressing when prepared by the cumol process: "1. It is aseptic, antiseptic, and impervious to germ life. 2. It is thin and pliable. 3. It is transparent. 4. It is fibrous and adherent. 5. It forms a light and comfortable dressing. 6. It is readily removed by the application of moisture."

89. **The Dry Method in Surgery.**—Walker advocates the use of the dry method in surgery as meeting all the requirements and favoring infection less. He has performed by the dry method 262 operations on 234 patients with a mortality of 5. One of these fatal cases was a suppurating fibroid, and the patient had been septic for weeks, and it was done *in extremis;* another was a resection of the pylorus and one-third of the stomach for cancer; the third was a resection of the sigmoid flexure for malignant disease, and the fourth, an infected urachus. In the fifth, death occurred forty-eight hours after a prostatectomy. Of the total number 163 were clean cases, and in 2 there was a suppuration in the wound. The remainder were absolutely aseptic in healing. The infected cases were 71 in number, of these there was no suppuration afterward in 47; 24 were septic after the operation. Some were emergency cases and the preparation not as good as it should have been. Of the total number 72 were laparotomies.

96. **The Brain and Its Evolution.**—The special point in Woodruff's article is that civilization and brain development have gone hand in hand, and that the lower races that have not taken part in it are forever unfitted for the former, the more so the earlier "they escaped from the factory of brain." He holds that the negro is unsuited for civilization, and must necessarily become extinct; that change of climate must necessarily be accompanied by change of type; that religion is purely a matter of brain evolution and race; that evolution is still a constant effective factor, and that efforts to modify it by checking or preventing degeneration are futile. We are now passing through the critical period, separating the earlier era of savagery and the future one of specialists.

99. **Dispensary Treatment of Mental Diseases.**—Channing gives an account of the methods of treating out-patient cases of mental disorder in the Boston dispensary. Many of them were developed cases of insanity, unrecognized or otherwise. Others were incipient cases in which the attack was checked by the treatment received, or cases that were prevented from developing into insanity. Still others were epileptics, cases of simple depression, or were defective children, susceptible of amendment under proper treatment. Some cases were benefited by being sent to the hospital in time, others they were able to prevent from going there. The clinical advantages are also discussed.

100. **Dementia Precox.**—Browning's article is a translation from the German of Kraepelin.

101. **Chloretone.**—Nine cases of the continued use of chloretone are reported by Dunton; in all but one unfavorable action on the heart, kidneys, etc., was observed. He thinks the main disadvantageous action is on the heart and that it is depressant in character. The total amounts given in each case ranged from 200 or 300 to 1100 grains. The latter amount was reached only in the patient who showed no bad effects.

102.—This article was noticed in The Journal in the issue of July 20, page 218.

FOREIGN.

British Medical Journal, August 24.

Treatment of Wounded in Naval Actions. Fleet-Surgeon Gilbert Kirker, M.D.—The author discusses the subject under these heads: 1, the surgeons' station; 2, the time of treatment; 3, the conveyance of the wounded. As regards the first, modern ships of war have not the old cockpit; Kirker thinks an operating room should be provided, protected in time of action, so that the experience of the Japanese ship *Hujei*, where all medical supplies were destroyed and the whole medical force was put hors de combat by a shell, should not be repeated. As regards time of treatment it seems to be generally held now that any elaborate surgical work during action is impracticable; but naval actions are liable to be quickly over. The men should receive instruction as to first aid, and stimulant and restorative drinks be provided. For the conveyance of the wounded, a ship ambulance should meet several indications; it must retain its occupants safely in all positions; it must be able to slide down steep ladders, at any angle, be short enough to go around corners, in confined spaces, and where two men can not move it well in confined spaces it should be transportable by one. He mentions certain appliances, among them one of his own device, an "ambulance sleigh," which is now under trial.

The Disposal of the Wounded in Naval Actions. SURGEON F. H. A. CLAYTON, R. N.—This article reviews the conditions rather more in detail than does Kirker, pointing out the necessity of safe storage of the principal medical supplies, having dressing stations only on deck with first aid appliances, mattresses, etc. On ships where a protected operating room is unavailable several localities may be selected, in case any one is liable to be wrecked, and utilized at the earliest opportunity. Sterilized clothing for the men to be put on before action is suggested, and the desirability of a good and always ready application for burns. The picric acid treatment suggests itself from its simplicity and the infrequency of needed changes of dressing. The importance of ambulance drill and instruction is dwelt upon.

Floating Hospitals. INSPECTOR-GENERAL BELGRAVE NINNIS, R. N. (retired).—The points emphasized as of supreme importance by the author are the following: 1. That the ship should be of metal, cased on the outside with wood, thus combining the cleanliness of metal with the coolness and nonconductibility of wood, and that there should be no possibility of communication between the bilge and the wards. 2. That the wards should be absolutely without communication one with the other, and that each should have direct and independent air communication with the upper deck. 3. That the portion of the main and middle decks appropriated to the waterclosets should extend across the deck, so that a through current of air could be secured. 4. That the watercloset when in use should be absolutely cut off from this space. 5. That the platforms fitted outside the main and middle decks be of such a size as to accommodate a stretcher or lounge, and the parts leading on to them be in such a position as to give easy passage to a stretcher or carrying chair. It is most essential that in these ships lighting should be by electricity, as the power required for producing this would be utilized for various other purposes, as is done in our larger passenger steamers.

Healthfulness of Modern Warships. STAFF-SURGEON W. E. HOWE, R. N.—Howe shows from official tables that the earlier ironclads were healthier than the old wooden ships, and that the more modern vessels are better still than these. The requisites for a healthy ship are given by him as follows: "1. Have certainly not less than 120 cubic feet of space for each man, and more in the tropics. 2. Have uptake ventilators from every compartment, opening as near the top as possible. These should be so constructed as to be capable of being cleaned by a brush pulled through. 3. Cowls and air-shafts are needed to be supplemented in all favorable weather by a windsail for each hatchway and wind scoops for each port or scuttle in the side. Artificial ventilation is required for every space in which men live (only to be used on the main deck in bad weather). 4. She should be warmed and kept dry by steam radiators. In 1888, the *Alexandra* having been fitted with electric light and being now kept drier by the heat radiated from the boiler always alight, had less than half as many cases of Malta fever as she had had in each of the four preceding years. 5. Whenever decks are washed, the last washing over should be done with a 1 in 1000 solution of perchlorid of mercury or another antiseptic. The mess tables and stools are similarly washed. This reduces the liability of casual wounds to inflame. I would like also to spray the beams overhead witth formalin solution once a week in order to diminish the occurrence of sore throats and other septic diseases. But I quite believe the best general antiseptic on board a ship to be fresh dry air in plenty. 6. There should be a drying room for the wet clothes and bedding of the ship's company."

The Theory of Air-Borne Typhoid in Armies. H. E. LEIGH CANNEY, M.D.—From a consideration of the conditions under which typhoid originates and spreads in armies in India, South Africa, and Egypt, which he reviews in detail, including those of the camps of workmen at the Assouan dam, Canney concludes: 1. That the evidence of air-borne typhoid recorded in Indian military experience is not established. 2. That in South Africa and Egypt the evidence is opposed to this theory. 3. That in India, South Africa, and Egypt the immense weight of evidence and probability is in favor of a water-borne origin and spread. 4. That the evidence from Egypt proves that if the avenues to man by means of water be protected, all other avenues are powerless to originate and spread typhoid in large bodies of men. There is strong evidence to suppose that the same methods would bring about like results in India, South Africa, and other countries. 5. That the origin and spread of typhoid by means of flies and dust being theory only, can only be discussed as such in relation to certain laboratory experiments, and that in practice it is unjustifiable to hold this theory, if it should deter, delay or hinder the adoption in armies of the most vigorous, and comprehensive measures against water-borne typhoid. The laboratory research, he holds, proves: 1. That in soils in which it might be expected it is never found. 2. That it is extremely difficult for the typhoid bacillus to live in soil, and that, if much moisture exists and a temperature above 66, it will only live some hours. 3. That the action of light and total drying on the superficial layers of infected dust are so specially deadly to the typhoid bacillus as to account for the fact that, though it may be partly dried in the laboratory, it has not been driven through the air and recovered. 4. That its recovery from water is difficult, and failure to recover it does not show either that it was not there at the time of examination, or at any previous time. It is interesting to find that the conclusion arrived at in the study of the natural experiments or epidemics coincides closely with the facts which laboratory research has established. Enteric fever will have to be met in all parts of the world on the water-borne theory mainly, though every other avenue must be guarded. His conclusions were combated in the discussion following by Lieut.-Col. Giles, I. M. S., who criticised his deductions from India where air-borne and fly-borne typhoid was a frequent mode of infection and the water-borne theory failed to account for many attacks.

The Lancet, August 24.

How Can the Tuberculin Test be Utilized for the Stamping Out of Bovine Tuberculosis?—SHERIDAN DELEPINE, M. D.—Delepine finds from his investigations that: 1. Tuberculin is an almost infallible test of the presence of tuberculosis in animals under seven years of age when this fluid is used with proper care. In older cattle clinical methods are more reliable than the tuberculin test as used at present. (The use of larger doses than the usual ones may, however, be resorted to with advantage in these cases.) 2. It is possible by the use of tuberculin and thorough disinfection of cattle-sheds to stamp out tuberculosis from a herd in the course of one year. 3. Cases of infection which may accidentally occur after this preliminary removal of tuberculous cattle can be easily and economically detected by periodical use of tuberculin. 4. Tuberculous animals between two and three years of age can be disposed of on the meat market without serious loss. 5. The slaughter of cows in calf or of milch cows not in an advanced stage of tuberculosis involves a serious loss to the farmer, and so long as tuberculosis is as prevalent as it is at the present time it is doubtful whether the measures necessary for the extirpation of tuberculosis can be left to private efforts without state help. 6. To remove the chief sources of infection immediate slaughter should be resorted to in the case of all animals in a state of advanced tuberculosis, and of all cows with tuberculosis of the udder. 7. Milch cows and cows in calf in which tuberculosis is not very advanced should be isolated and slaughtered only after they have been suitably prepared for the butcher. The milk of tuberculous cows should invariably be sterilized by boiling. 8. Valuable breeding animals free from advanced tuberculosis or tuberculosis of the generative organs should be isolated; and they can be kept for a time for breeding purposes, provided the calves are isolated and fed on sterilized milk. 9. Measures which do not provide for the removal of all tuberculous animals from a district, for the disinfection of all cattle-sheds in that district, for the periodical testing of all the animals within the district, and which do not give the means of preventing the importation of tuberculous animals can not be expected to yield satisfactory results. On the basis of these conclusions he advises dividing the country into administrative and inspection districts; marking and registration of all cattle and isolation of tuberculous animals, and disinfection of sheds where they have been; immediate slaughter of all advanced cases, and fattening for the market of those less advanced, the slaughter to be done in public abattoirs to insure proper meat inspection. He would have compensation for condemned animals allowed for a year or two; after that, the finding of an advanced case to subject the owner to a penalty. He advises the testing of all introduced cattle to prevent fresh sources of disease; no cattle over six years old should be imported. All milk from tuberculous cattle should be boiled before used, and control of imported foreign dairy produce to insure equal standard of purity as with home produce. In order to prevent disturbance in the dairy business he would enforce these rules gradually, first in one, then in another part of the country, taking five or six years to make them complete and uniform.

The Treatment of Melancholia. L. C. Bruce and H. de Maine Alexander.—The authors say: "We believe melancholia to be a disease of disordered metabolism and that treatment should be directed towards increasing the excretion of waste products of this metabolism through the channels of the urinary and integumentary systems, and we mechanically accomplish this end by administering to our patients an abundant fluid dietary. By means of this treatment the blood gets rid of its overcharge of waste products and the arterial tension falls. We assist digestion by giving milk frequently, and in small quantities, as it is the most easily assimilated food. We consider the forcing of solid food (or such as custards) upon a patient suffering from acute melancholia just as injudicious treatment as would be the feeding of a patient suffering from typhoid fever exclusively on beef-steaks." They give charts illustrating the progress of the treatment in four cases; also a weight table of the last eight cases treated. They believe that thus managed, melancholia is a disease very amenable to treatment.

The Conditions of the Blood in Scarlet Fever. F. Percival Mackie.—From the examination of the blood in twenty-five cases of scarlet fever of varying degrees of severity, and at various stages of the disease, Mackie found that moderate anemia was a constant feature. In half the cases the red cells numbered between 3,500,000 and 4,000,000 per cubic millimeter; the highest count was 4,170,000. The percentage of hemoglobin was in direct ratio to the number of red cells, so that the individual corpuscular richness kept him very nearly normal. All the cases were accompanied by leucocytosis to a pathological degree, that is, over 10,000 per cubic millimeter. This leucocytosis seems to bear no direct ratio to the temperature, but varies rather with the severity of the throat lesion, and to a less extent with that of the rash. In most cases the increase of leucocytosis began about 24 hours after the appearance of the rash, and reached a maximum after the subsidence of the general symptoms, and at times varying in different cases from the third to the tenth day. Mild cases show a maximum increase about the fourth day after the appearance of the rash, and therefore generally not less than 24 hours after the complete disappearance of the rash. In the presence of septic complications the duration and intensity of leucocytosis naturally depends upon the intensity and duration of such complications. In anginal cases the leucocytosis may be very high (93,300 in one case), and in the one fatal case it diminished as the disease became more severe. This seems analogous with the blood condition in pneumonia, where a decrease of leucocytes in a severe case is looked upon as a bad sign. Percentage enumeration of white corpuscles was only carried out in a few instances, but in these the chief increase of eosinophile cells was present (5 or 6 per cent.). These results agree in the main, as he shows, with those of other observers. They also tend to bring the question of leucocytosis in scarlet fever into line with that found in other diseases, notably pneumonia, and indicate that this leucocytosis is a favorable sign, perhaps having some relation to acquired immunity. Its absence, on the other hand, especially in a severe case, is of bad import, and the same is true of a sudden drop in a case of increasing severity. It is of further value in his experience as indicating septic complications such as deep suppuration in the neck or obscure middle ear disease not revealed by the temperature. The condition of the throat has much to do with the leucocytosis which is not excessive when the discharge is free. Contrary to Cabot's experience, Mackie found no leucocytosis until the rash had appeared for twenty-four hours. He remarks that the increase of eosinophile cells is interesting and supports the theory of their having to do with the production of antitoxin, though unfortunately it does not hold good in other diseases where antitoxin is produced. He is inclined to think that these cells are in some relation to skin conditions, as they are increased in many skin diseases. He has not, however, been able to determine any relations between them and the scarlet fever rash or between the leucocytosis and the kidney complications. The deficiency of red blood cells indicates rational use of iron medication, except possibly in cases with arthritic complications.

Annales de l'Institut Pasteur (Paris), July.

Importance of the Micellae in the Chemistry of the Cell. S. Posternak.—Posternak describes a series of comprehensive researches on the structure and changes in colloid substances. He has become convinced that the different groups can be differentiated by the elective character of the adhesive affinity of their micellæ. The adhesive affinities of the micellæ are distinctly elective and specific, like chemical affinities. As protoplasm is made up principally of colloid matter—whose micellæ do not become dissociated without the intervention of a chemical reaction—the most important factor in the structure of the cell may prove to be the elective affinities of the micellæ. The chemistry of the cell is something more than merely molecular; it is evidently to a large extent, micellar.

Annales des Maladies des Org. Gen.-Urin. (Paris), June.

Indications for Nephrectomy in Renal Tuberculosis. F. Legueu.—Patients are frequently treated for tuberculosis of the bladder when the real trouble is incipient renal disease. Nephrectomy is indicated when the tubercular lesions are progressing and causing emaciation. Hemorrhage and pain are secondary indications. Emaciation progressing in spite of medicinal measures clearly indicates nephrectomy. Tubercular infection of the bladder or lungs is not an obstacle to nephrectomy. It is frequently remarkably benefited by it. The ureter must be resected also, if very much affected. The upper end alone may be removed, leaving the rest to atrophy. When the kidney is removed before the appearance of other manifestations of tuberculosis, permanent cure may result. One patient with tuberculosis of the lung, kidney, one ureter and bladder, gained fifteen pounds after the infected kidney was removed.

July.

Pathology of the Seminal Vesicles. R. Duhot.—Acute and chronic inflammation of the seminal vesicles is much more frequent than generally supposed, Duhot asserts as the results of extensive clinical and experimental research. Gonorrhea is not the sole cause—any of the pyogenic microbes may induce it. Chronic spermatocystitis is especially frequent. It may be consecutive to chronic gonorrhea or merely the consequence of repeated inflammations in the neighboring organs. The changes induced in the vesicles by inflammation are both numerous and severe, interfering with the functions of the organ and inducing sterility by altering the composition of the sperm and killing the spermatozoids. The changes from amyloid degeneration and acute diphtheritic inflammation of the seminal vesicles in two cases are illustrated.

Treatment of Contusion of the Kidney. P. DELBET.—The 320 cases collected from the literature include Fenger's, published in THE JOURNAL in 1889. Delbet's conclusions from this review, from one personal case and considerable experimental research, are that the treatment of renal contusion is of necessity purely symptomatic. Immediate intervention is indicated on suspicion of intraperitoneal hemorrhage. Hematuria alone does not justify it. Secondary operation is indicated only in case of symptoms and gradually increasing subperitoneal hemorrhage, anuria or persisting hematuria. Intervention, however, is formally indicated in case of secondary hematuria. The operation should be as conservative as possible, unless the kidney has been torn from its pedicle, or is crushed completely or has the "dead leaf" color; any of these conditions demand nephrectomy. Otherwise the kidney should be merely exposed, tamponed and the wound left open. In the personal case described a young man had fallen from a second story. The kidneys showed no signs of injury at first, but suddenly hematuria and a swelling in the region developed, apparently cured by nephrotomy and suture. Five months later, however, the symptoms recurred, and notwithstanding attempted nephrectomy, death occurred in a few hours.

Technique of Suturing the Urethra. J. ZADOK.—The healing of an incision or wound in the urethra is much facilitated by the technique which Zadok has practiced on fifteen patients with brilliant success. The urethra alone is sutured. The wound in the soft parts is merely extensively drained through the gaping lips. This technique is indicated in all cases in which the urine is septic or there is suppuration of the meatus or perineum at any point. The permanent sound should be changed on the third day, and removed on the fifth to eighth day at latest, and progressive dilatation commenced.

Presse Medicale (Paris), August 7.

Transmission of the Meningococcus by the Respiratory Passages. BUSQUET.—Nasal mucus from patients with epidemic cerebrospinal meningitis was placed in the nose of guinea-pigs. All the inoculated animals became infected and the meningococcus was cultivated from the cerebrospinal fluid of those that died. Other animals inoculated with nasal mucus from the infected animals also died. Nasal mucus from the infected animals was placed in the nose of other animals of the same species, and the latter likewise succumbed to the infection. Cerebrospinal fluid from patients dying from the disease was placed on the nasal mucosa of animals with like positive results.

August 14.

Forceps for Simultaneous Hemostasis and Suturing. J. C. LIMA CASTRO.—The upper surface of the forceps is cut in a series of deep, parallel, transverse grooves. The side view of the blades of the instrument resembles an arc of a cogwheel. The forceps are applied for hemostasis as usual, and the stitches of the suture are taken through the tissues squeezed flat between the blades, one stitch at the bottom of each groove in turn. The forceps was designed especially for use in hemorrhoids, but has proved valuable in many other operations.

Revue de Chirurgie (Paris), August.

Radiography in Surgery of the Lungs. T. TUFFIER.—Operations on the lungs in which the lesion was accurately diagnosed beforehand were successful in 71 per cent., that is, the mortality was only 29 per cent., while the mortality was 60 per cent. in the cases in which there was a mistake in the diagnosis. In 300 cases which Tuffier has collected, the lesion had been incorrectly diagnosed in 48. In 9 cases the lesion was supposed to be in the lung when it was in reality in the pleura, liver or kidney. Tuffier's personal experience now includes 25 operations on the lungs. He was able to apply radiography in 8. In 5 the results were extremely satisfactory; in 3 they were negative. He urgently advises radiography and especially stereo-radiography, in all cases before operating on the lung. When the radiographic findings contradict those obtained by percussion and auscultation, the latter should be neglected and the radiographic indications followed. The *x*-rays, however, are liable to fail in case of living hydatids, and they are unable to afford information in regard to the multiplicity of the foci. The results are liable to be negative when the lesion is on the left side, as the shadow of the heart may cover it. In two cases gangrenous abscesses in the lower lobe of the right lung cast distinct shadows, enabling them to be promptly evacuated with rapid recovery of the patients. In another case the entire left lung was opaque, but the shadow was a trifle denser in the lower third, where the dulness was most marked, where the focus was found. In a fourth case, radiography located the lesion toward the base of the lung while the stethoscope indicated a higher site. The incision was made at the latter point, with negative results even after resection of the rib. The rib below was then resected, and the pleura was found adherent with the lung sclerosed and hard, and a series of pockets in the bronchi were discovered at the points indicated by the *x*-rays. In the three negative cases, the lesion was on the left side.

Laceration of the Vessels in Fractures of the Clavicle. E. GALLOIS.—Laceration of the vessels is a very serious complication of simple fracture of the clavicle. Only 2 patients recovered in the 11 cases collected. The successes recently obtained in operation on the vessels of the neck, justify the assumption that improved technique will reduce the mortality of these injuries of the vessels from fragments of the fractured clavicle. Free incision must be made and the entire clavicle resected if necessary. Wounds of the veins seem generally less serious than those of arteries. Gallois' experiments on the cadaver and clinical experience have shown that the subclavian vein is always injured at the point back of the inner third of the clavicle, and the internal jugular, several centimeters above the sterno-clavicular articulation. Compression or ligature has great possibility of success under these circumstances. There is no danger connected with the interruption of the circulation of the large veins at the base of the neck. A diffuse aneurysmal hematoma from the subclavian is more serious. All the patients have died, irrespective of the method of treatment adopted. In a personal case reported, the indirect fracture of the right clavicle was followed by an arteriovenous aneurysm. An injection of gelatinized serum was made, but the results were deplorable. Suppuration at the point of injection followed, with consequent inflammation of the aneurysmal sac, requiring operation to forestall pyohemia from perforation of an abscess into the large vessels. The wall of the sac had become weakened by the suppuration, and ruptured. Gelatin treatment should be reserved for internal aneurysms in which surgical interference is impossible. It should be absolutely rejected in all cases amenable to operation. In the case of the aneurysm mentioned above the inner fragment of the clavicle was removed and the incision carried along the entire margin of the sterno-cleido-mastoid muscle.

Anuria in the Course of Carcinoma of the Uterus. PATEL.—Anuria may appear as the first symptom of malignant disease in the uterus, or it may appear suddenly in the course of recognized carcinoma, or may develop progressively. The latter most frequently occurs. Nephrostomy by the lumbar route is the operation of choice, except in advanced stages of malignant disease. If the general condition is good, the operation should be performed promptly, to forestall or cure the resulting uremia. In two ureterostomies and six nephrostomies that have been reported in France, the patients survived several months after the latter operation, but death followed in a few days after the operations on the ureters.

Traumatic Rupture of the Spleen.—Two cases of rupture of the spleen from the kick of a horse were related at a recent meeting of the Société de Chirurgie. There were no signs of internal hemorrhage until twenty-four hours afterward, when splenectomy was performed. Only one patient recovered. The other succumbed to septicemia the sixth day. The only signs of the injury at first were pallor, vomiting once, and rigidity of the contracted abdominal wall.

Semaine Medicale (Paris), August 14.

Clinical Utilization of the Dosage of Iron in the Blood. L. Bard.—According to Bard's belief, all the tissues of the organism are constituted on a common plan, and comprise a fundamental species of cell, which ensures their special existence, but has nothing to do with their physiologic activity, and, on the other hand, one or more derived substances, formed by the cells in their protoplasma or outside, which are the only substances endowed with the physiologic function. In the blood, for instance, the fundamental cell is represented by the leucocytes, while the hemoglobin and the serum are the derived substances. According to this theory, the hemoglobin is not a stable substance, with the definite composition usually attributed to it. It varies according as it is freshly formed or ripened, and these variations cause the relations between the hemoglobin and the color of the blood to be modified under diverse circumstances. For example, the iron is increased in proportion to the color, that is, the amount of iron is increased more than the color has changed, in comparison with normal blood, in all cases of simple anemia with normal blood-producing and blood-regenerating powers. On the contrary, the amount of iron is less, in proportion to the color, in all cases in which the regeneration of the blood is defective from cachexia or serious organic disease. In certain affections the diagnosis is uncertain owing to the impossibility of determining whether the accidents observed in chlorosis, for instance, are due to the intensity of the latter, or whether the chlorosis itself is caused or maintained by some organic affection of heart or lungs. Dosage of the iron will promptly decide the question. In simple chlorosis, before it is improved by treatment, the proportion of iron surpasses the color by 10 to 20 per cent. on an average. When the chlorosis is complicated by tuberculosis, the inverse proportion prevails and the iron is 10 per cent. behind the color. The same phenomenon is noted in anemia symptomatic of tuberculosis, with or without chlorosis. This comparative dosage of the iron may also serve to solve some of the problems of the effect of altitude on the blood.

Berliner Klin. Wochenschrift, July 29.

Chronic Pentosuria. F. Meyer.—A patient was treated at Leyden's clinic for chronic pentosuria. The symptoms were extreme emaciation and neurasthenia with rebellious neuralgia. The tolerance for carbohydrates and food rich in nuclein was remarkable. The patient rapidly improved on a mixed diet.

August 12.

Subcutaneous Injections of Gelatin for Hemostasis. Grunow.—Twenty-seven cases of severe internal hemorrhage were treated at Quincke's clinic by the subcutaneous injection of gelatin, with only one death. In 7 cases the hemorrhage was from the lungs, including one of gangrene consecutive to injury from swallowing lye. Five days after the first injection, a quantity of clots was expectorated, with 380 c.c. of blood. Four days later another mass of clots was expelled with less blood. The largest clot was the size of the finger, with distinct ramifications. In fifteen days the sputum was quite free from blood. The patient died a week or so later from the consequences of an abscess, not from hemorrhage. In 8 cases the hemorrhage was in the intestines; 6 in the course of typhoid, 1 in leukemia and 1 in purpura hemorrhagica. In 7 the hemorrhage was from the stomach; from ulcer in 5, carcinoma in 1 and hemophilia in 1. Twice the hemorrhage was from the bladder, twice from the kidney and once from an aneurysm. In the overwhelming majority of cases the hemorrhage was arrested, transiently or permanently. The failures were probably due to inadequate dosage. As the hemostatic influence of the gelatin is transient, it is administered daily as long as necessary, injecting 2 gm. of gelatin in each thigh, dissolved in 100 gm. of salt solution, using a bulb instead of a syringe, with the air filtered through cotton. The apparatus is kept always ready for immediate use. Other hemostatics were applied at the same time, but the recurrence of the hemorrhage when the amount of gelatin was reduced, and the expulsion of large, tough coagula, indicate that the gelatin was principally responsible for the hemostasis. The gelatin is useless unless a sufficient quantity is injected, and repeated as long as the tendency to hemorrhage persists, and for a few days afterward. There are no contra-indications. The temperature commences to rise a few hours after the injection in nearly every instance, sometimes accompanied by a chill, and may reach 102 or 103, or even to 104 F., but is lower at each succeeding injection. In one case a 3 per cent. solution was used, and three tumors developed under cool skin, quite tender, but subsiding in a couple of days. Urticaria was observed several times in one case. These by-effects are disturbing to nervous patients, but their inconveniences are not sufficient to prohibit the use of the gelatin in case of severe internal hemorrhages. The degree of pain of the injection is proportional to the tension of the tissues. The gelatin is absorbed in a few minutes to twenty-four hours or longer. Absorption is more rapid in lean patients with loose subcutis and in patients who have lost much blood. The needle should be pointed in various directions to distribute the gelatin as much as possible. The urine was free from blood in eight days after commencing the injections in a case of acute hemorrhagic nephritis. In a case of aneurysm of the pulmonary artery, systematic injections were followed by the retrogression and final disappearance of all the symptoms of perforation, including a palpable, fluctuating tumor under the skin.

Centralblatt f. d. Grenzgebiete (Jena), August 10.

Surgical Treatment of Essential Epilepsy. A. Pilcz.—An array of 105 communications on the surgical treatment of essential epilepsy, is reviewed in this article, including Beck's and Laplace's articles in The Journal in 1897 and 1899. Pilcz concludes that on the whole we may safely assume that operation is useless. Neither sympathectomy nor craniotomy is capable of insuring a permanent cure nor even a lasting improvement. He personally considers these operations as more serious than usually accepted. Graf, for instance, reports a mortality of 6.1 per cent. from trephining. Three cases of death after sympathectomy have recently been reported, including two reported by Braun, out of nine in which he had operated without a single success.

Muenchener Med. Wochenschrift, August 20.

Stab Wounds of Diaphragm. C. Schlatter.—Frey collected 33 cases of stab wounds of the diaphragm, all fatal but 4, generally from incarceration of the protruding intestine. Schmidt, on the other hand, collected 43 cases in which operation resulted in the recovery of all but 6. When death occurred it was always in the first few hours. These figures indicate the necessity of operative treatment, and the danger of delay. They justify Postempski's recommendation of investigating the wound in the diaphragm with the disinfected forefinger, enlarging the external wound for the purpose if necessary. Schlatter reports 2 cases of stab wound in the lower portion of the thorax, with evidences of hemorrhage into the pleural cavity. The symptoms of marked anemia—scarcely to be attributed to a hemorrhage from the lungs on account of the limited area of dulness—and the vomiting, suggested injury of the diaphragm. The dyspnea and results of percussion and auscultation were not pathognomonic. In one of his cases, a rib had been cut by the blow and he surmised deep injury. He, therefore, resected the ninth rib and enlarged the wound found in the diaphragm from 3 to 8 cm. Blood poured out from the abdomen. The forefinger introduced through the diaphragm revealed an incision 2.5 cm. deep in the edge of the liver and another, shallower, lower down. The bleeding was checked by compression, when it was found that the kidney had also been incised to a depth of 8 cm. and more. The wounds in liver and kidney were disinfected with small gauze sponges, and the incision in the kidney was sutured with 5 stitches taken deep in the parenchyma. The larger incision in the liver was sutured with 4 stitches through the parenchyma and capsule, and the smaller, with a single stitch. The bleeding was immediately arrested. The abdominal cavity was then cleansed of the accumulated blood with gauze sponges, and the wounds in the diaphragm and pleura sutured with silk. The wound in the skin was then sutured without drainage and the patient rapidly recovered with no symptoms of any reaction on the part of the peritoneum or pleura. He left the hospital in thirty days and continued his mountain climbing without the slightest inconveniences. This patient was a printer, 24 years old. The second patient was 17, and the stab wound was in the seventh interspace, and extended into the pleural cavity. The eighth rib was resected and an incision 3 cm. in length discovered in the diaphragm. A sound introduced failed to demonstrate any opening in the peritoneum. A vessel in the wound in the diaphragm was bleeding profusely. This was ligated and the wound in the diaphragm closed by four silk stitches. After removal of the blood clots from the pleural cavity the wound was sutured, leaving a gauze drain. The cyanosis and dyspnea seemed somewhat intensified by the operation, but soon subsided. Slight temperature was observed the third day, but otherwise recovery was uneventful and rapid. The patient was dismissed in thirty-three days completely recovered. Schlatter observes that the immigration of Italian laborers may increase the frequency of such wounds, as almost all of the 89 cases of stab-wounds of the diaphragm on record were inflicted by Italians. In a case he published a few years ago, a portion of the omentum, the size of a fist, protruded from the wound in the pleura. He was able to reduce the hernia and suture the diaphragm with six silk stitches and patient recovered.

Thrombosis of Left Innominate Vein with Pericarditis. P. v. Zezschwitz.—A case is described of thrombosis of the left innominate vein from compression, the consequence of a pericardial exudate superposed on a pleuritic effusion. The latter alone had been diagnosed, and the unilateral hydrothorax of 5 liters was a surprise, also the condition of the heart, which was found small, but intact. Immediately after evacuation of the pleural effusion by puncture during life, the hitherto inaudible heart sounds became distinct, but they disappeared again as the pleural area of dulness increased.

Tracheal Hemoptysis. G. Avellis.—Obstinate constipation and hemorrhoids with violent straining at stool for years, resulted in a varicose condition of the veins in the anterior upper space between the rings of the trachea in a case described. The consequences were occasional hemorrhage from the dilated veins. The cause of the hemoptysis was surmised by Avellis from theoretical study of the conditions, and on examination the varicose veins were discovered at the point where he had anticipated finding them. Cauterization of the dilated veins soon cured the tendency.

Medicinal Phosphorus Poisoning. Nebelthau.—A child of 2 years took 3 mg. of phosphorus in the course of sixty hours, combined with cod-liver oil in the usual proportions. The child was well-nourished, but showed symptoms of rachitis. Symptoms of rapidly fatal phosphorus intoxication developed, confirmed by the pathologic changes in the organs. In future, Nebelthau proposes to reduce the proportion of phosphorus from .01 to .001 per cent., a teaspoonful twice a day, not increasing the dose until convinced of its harmlessness.

Wiener Klinische Wochenschrift, August 8.

Collateral Arterial Circulation after Complete Obliteration of all the Arteries at the Arch of the Aorta. W. Tuerk.—The origins of all the large arteries in the arch of the aorta were completely obliterated by an endo-arteritis on a basis of lues. The clinical picture was the exact reverse of what is observed in stenosis of the isthmus of the aorta. The patient was a baker's assistant, 44 years old. All the arteries in the trunk, head and extremities were almost if not entirely pulseless, while the cervico-abdominal aorta and the femoral arteries pulsated vigorously. The entire trunk, especially the back, was covered with dilated, tortuous and strongly pulsating arterial vessels, with an upward current. There was also a small aneurysm on the arch of the aorta compressing the left recurrent laryngeal nerve. The right coronary artery was also occluded. The only symptoms had been occasional pains, as from pressure, in the extremities and weakness, with slight transient vertigo on exertion. The arms toward the last became easily fatigued and the patient became emaciated, with symptoms indicating the small aneurysm. The remarkable feature of the case was that the symptoms were so few and slight when the supply of blood to the brain, neck and arms had been completely cut off for a long time, without essential functional disturbances.

August 15.

New Blotting-Paper Test of the Blood. S. Pertot.—The factors that enter into the absorption of fluids by a porous substance are both physical and chemical. Pertot suggests a new method of clinical diagnosis of the blood at the bedside, which is based on absorption, and is so simple and inexpensive that it is within the reach of every one. All that is required is a square of good blotting paper about the size of a playing card. A small amount of blood is aspirated in a pipette and mixed with water, in the proportion of 2.5 cm. to 1 cm. The blotting paper is placed on a sheet of glass and the pipette is placed inverted upon it, held perpendicularly in a small standard, just touching the paper. The fluid is slowly absorbed by the paper, and forms rings of various hues, the tints and size of the rings characteristic of the different composition of the blood. Two pipettes are always used, in one the blood is diluted with water from the faucet and in the other with distilled water, as the resulting pictures differ with these media, probably owing to the presence of salts in the undistilled water. Pertot has made hundreds of these blotting-paper pictures of the blood, and found them invariably identical under the same conditions of health and disease. The color fades in time, but the rings are still perceptible. The clearest pictures were obtained with the blood of new-born infants; their blood contains a larger proportion of reds than that of adults. Paper treated with dilute hydrochloric acid exhibits a picture resembling a narcissus flower.

Operative Evacuation of Mastoid Abscess with Schleich's Local Anesthesia. G. Alexander.—Eleven cases are described in which general narcosis was contra-indicated on account of pregnancy, pleuritis, nephritis, severe anemia, or other cause, and the operation was performed under local anesthesia alone in Politzer's clinic. The conditions of success are that the patient retain the same position throughout the entire operation and if pain is experienced, that he announce it to the operator without immoderate manifestations. These conditions were fulfilled in all but one case, and in this, the operation was successfully concluded in spite of the patient's restlessness. The ear affection had lasted from three weeks to eight months in the various cases. The amount of fluid used varied from 35 to 70 c.c., corresponding to 7 to 14 cg. of cocain, but as most of it is evacuated at once by the operation, very little can be absorbed. Each step of the operation is preceded by thorough infiltration of the soft parts down to the bone, especially of the attachment of the sterno-cleido-mastoid muscle, which is pushed back to expose the bone completely. The deeper portions of the bone are injected merely to anesthetize the granulations and swollen endostium. Solid bone is not sensitive. Chiseling the process is felt as a mere pounding, disagreeable, but not painful. The noise is reduced by covering the face of the mallet with gauze, and the patient's attention should be diverted at first by conversation with an attendant. The analgesia is not so complete as in general narcosis, but the superior advantages in certain cases are so marked that the method is recommended for all tranquil, trusting patients. Even nervous, excited patients may become tranquil during the operation. All the patients made a normal recovery. In five cases no pain was experienced and the patients had appetite for lunch. In the others, there was moderate pain in the wound or head. In two cases the patients vomited several times, and in one, radiating pains were experienced in the upper jaw for a time.

Xeroderma Pigmentosum. A. Halle.—Only two cases of complete recovery from this affection are on record, although a few authors have reported long survivals. Most of the subjects die in youth, generally from carcinoma cachexia. A personal observation is described in detail. On the basis of this case and those in the literature, Halle is convinced that the influence of sunlight in this affection has been exaggerated, and that it is a factor only in the initial erythema. The succeeding manifestations, the pigmented hypertrophy, the atrophy of the skin, the tendency to malignant proliferation of the epithelium, suggest the assumption of premature senility as a more plausible explanation of the cause of the disease.

Vratch (St. Petersburg), August 3.

Peritoneal Adhesions. E. Y. Katunsky.—Peritoneal adhesions in general, and especially the typical adhesion described by Gersuny, afford very important information in regard to abdominal affections and the organs of the abdominal cavity, including the female internal genital organs. It is of the greatest importance to determine the presence or absence of peritoneal adhesions before operating, and even before deciding on the method of operation. The existence of peritoneal adhesions—even if merely suspected—is an argument against the vaginal route. Much research is needed to establish the typical objective signs of various peritoneal adhesions, the origin, the clinical picture and the appropriate operation. Among the cases cited is that of a boy who was suddenly seized with vomiting spells eleven months after contusion of the abdomen. The appetite was good and there was no nausea, but pains appeared in the epigastric region four or five hours after eating. This region was also abnormally protuberant. The laparotomy showed that the upper surface of the transverse colon was adherent to the peritoneum and small intestine its entire length. In another case, in which the liver, gall-bladder and transverse colon were connected by peritoneal adhesions, the symptoms had been oppression and pains in the epigastric region after eating, nausea, vomiting, occasionally hemorrhagic, eructations with the odor of rotten eggs, and constipation. The patient was an adult with a history of contusion of the abdomen fifteen years before. The lesion had been diagnosed an ulcer of the stomach before operating.

[Gersuny's typical adhesion, described in the *Arch. f. Klin. Chir.* lix, p. 102, was discovered in twenty-one cases, all characterized by an identical clinical picture. The pseudo-membranous band is about 4 cm. long by 2 or 3 wide, and runs parallel with the outer layer of the mesocolon, from the point where the latter is attached to the intestine to its origin in the parietal peritoneum. The band may be adherent to the mesocolon or stretch above it like a bridge. In either case it prevents any movement of the intestine from the lateral abdominal wall toward the median line, and may cause volvulus, or invagination of the sigmoid flexure into the rectum, according as the sigmoid mesocolon is abnormally long or short. In other cases, the symptoms are constant pain in the lower abdomen, with violent pain in the left side just before defecation, and generally chronic constipation. The appendix was palpable and tender, and the left side still more sensitive at a symmetrical point. The pains were usually increased by movements, and consequently the working capacity was much diminished. According to the patients' stories there was no preceding illness, and the pains maintained their characteristics in spite of all kinds of treatment, for years, unmodified. In 2 cases there was a history of perityphlitis; in 1 an intestinal catarrh, and in 1 the pains were first noticed after lifting a heavy weight and persisted unchanged for six years until operated on. All but 3 were women, and Gersuny is inclined to attribute the adhesion to some effusion of blood into the peritoneum, occurring without symptoms, during menstruation or from trauma, in a certain proportion of the cases, which may likewise explain the etiology of appendicitis. Inflammation may develop secondarily to the formation of the adhesion and restriction of the movements of the appendix. The adhesion is not found unless carefully sought for, lifting up the colon and tracing the sensitive region inward from the anterior iliac spine. Irrigation and abdominal massage may be required to complete the cure. All Gersuny's patients were cured or very much improved by the operation.—Ed.]

Queries and Minor Notes.

CHAPARRO ARMAGOSO.

Cameron, Texas, Aug. 29, 1901.

To the Editor:—In reference to the query of S. A. F., in The Journal of August 24, I beg leave to submit the following:

Chaparro Armagoso is Spanish for bitter chaparro, a thorny bush that grows in Southern Texas and Northern Mexico. Synonym; armagoso; chaparro bush; goat bush.

Part used: bark of root. Natural order: Simarubaceæ. Properties: tonic, astringent, and somewhat antiperiodic.

It is much used in this section for chronic dysentery, and is an excellent remedy in doses of 30-60 minims of fluid extract. The history of its use is about as follows: It has long been used by the Mexicans in the form of a tea made from the root. A physician of Southwestern Texas, seeing the success attending its use, sent the root to one of the manufacturers, who prepared from it a fluid extract. It is prepared by Parke, Davis & Co., and perhaps by others. Respectfully, R. L. Jones, M.D.

TREATMENT OF TUBERCULOSIS WITH TUBERCULIN.

Denver, Sept. 2, 1901.

To the Editor:—In The Journal of July 13, page 151, there is a paper copied from a German medical journal, "Treatment of Tuberculosis with Tuberculin," by Dr. Goetsch. I am most anxious to get some of the tuberculin used by him for the treatment of cases now under my care. Could you tell me in next issue of The Journal or as soon as convenient where and how it may be obtained? And much oblige, Yours, etc., A. E. F.

Ans.—Koch's tuberculin T. R. can be obtained from Victor Koechl & Co., New York City. Dr. Goetsch used both the old and the new tuberculin. The original article was published in the *Deutsche Med. Wochenschrift*, June 20.

STATISTICS IN REGARD TO TYPHOID FEVER.

A correspondent is anxious to get the following statistics in regard to typhoid fever: 1. Number of cases that occur annually. 2. Number of deaths annually from typhoid. 3. Percentage of deaths from hemorrhage and perforation, respectively.

X-RAY DERMATITIS.

Waycross, Ga., Aug. 23, 1901.

To the Editor:—Can you advise me where I can get literature on constitutional effects (if any) of *x*-ray burns? I have a case in which the patient has developed various nervous troubles. I would also be pleased to have your opinion in regard to after-effects from *x*-ray dermatitis, and death of soft parts from same cause; does sloughing take place shortly after burn is received, or at a remote period? Thanking you in advance for courtesy,

Yours truly, R. P. I.

Ans.—Some cases are on record in which exposure up to an hour with non-focused tubes produced no inflammation of the skin, but accumulative effects from numerous exposures are to be borne in mind and feared. Single exposures of much less duration with focused tubes have been followed by severe burns of *x*-ray dermatitis. The symptoms of the mild form consist of inflammation, hyperemia, papules, vesicles, itching with marked pigmentation, loss of the fine lanugo hairs, and marked diminution of sweat and sebaceous secretions. This in turn may be followed by the graver condition characterized by sloughing of greater or less degree, dependent upon individual peculiarities. Dermatitis may appear any time from three to fourteen days after exposure, and sloughing may occur either during this or at a later period. A year or more may be required for recovery in the graver cases, and is accomplished usually either by skin grafting or cicatrization. The following references may be consulted: *Deutsche Medicinische Wochenschrift*, 1896, No. 30, p. 481 (Marcuse); ibid., No. 41, p. 665 (Sehrwald); ibid., No. 42, p. 681 (Marcuse); ibid., 1897, No. 7, p. 105 (Forster); ibid., No. 26, p. 417 (Mies); *Berliner Klinische Wochenschrift*, No. 23, 1898 (Behrend); *Johns Hopkins Bulletin*, February, 1897, 23 cases by Gilchrist. See various articles and abstracts in The Journal.

Books Received.

TRANSACTIONS OF THE MEDICAL ASSOCIATION OF GEORGIA. Fifty-second Annual Session, 1901. Cloth. Pp. 436. Atlanta, Ga.: Published by the Association. 1901.

THE ELEVENTH ANNUAL REPORT OF THE EYE, EAR, NOSE AND THROAT HOSPITAL, of New Orleans, La., *Jan. 1, 1900, to Dec. 31, 1900.* Paper. Pp. 53. New Orleans: L. Graham & Son, Ltd. 1901.

THE FOOD VALUE OF MEAT. FLESH FOOD NOT ESSENTIAL TO MENTAL AND PHYSICAL VIGOR. Illustrated. By W. R. C. Latson, M.D., editor of Health-Culture. Cloth. Pp. 72. Price, 50 cents; paper, 25 cents. New York: The Health-Culture Co.

THE [illegible] (Remittent) MALARIAL FEVERS. By Charles [illegible] Acting Assistant-Surgeon, U. S. A. Illustrat[illegible] and 21 Clinical Charts. Cloth. Pp. 221. Price, $2.50. New York: William Wood & Co. 1901.

PRACTICAL FIRST PRINCIPLES. Simplifying the Study of Normal and Abnormal Structure and Function, and Aiding *Diagnosis.* Designed for the Use of Students and Practitioners of Medicine. By A. H. P. Leuf, M.D., Associate Editor of the *Medical Council.* Cloth. Pp. 105. Price, $1.00 net. Philadelphia: The Medical Council. 1901.

THE READY REFERENCE HANDBOOK OF DISEASES OF THE SKIN. By George Thomas Jackson, M.D., Chief of Clinic and Instructor in Dermatology, College of Physicians and Surgeons, New York. With 80 Illustrations and 3 Plates. Fourth Edition, thoroughly revised. Cloth. Pp. 642. Price, $2.75. New York and Philadelphia: Lea Brothers & Co. 1901.

New Patents.

Patents of interest to physicians, issued August 20 and 27:

680,689. Device for distributing odors. Charles T. Bradshaw, Philadelphia.

681,100. Disinfectant holder. Daniel N. Calkins, Rochester, N. Y.

680,723. Depurator. Ruth J. Maurer, La Crosse, Wis.

680,936. Bristle probang. Richard P. McCully, Brooklyn, N. Y.

680,814. Invalids' bed. Patrick C. Smith, Indianapolis, Ind.

680,898. Machine for impregnating thread with virus. O. Thomas, Verdun, France.

681,174. Treating curvature, etc. K. Wegner and E. Repke, Berlin, Germany.

681,010. Vaginal syringe. Frank Y. Wilhoft, New York City.

34,964. Design, electrotherapeutic device. B. G. Stauffer, Harrisburg, Pa.

681,664. Exercising apparatus. John S. Addleman, Cleveland, Ohio.

681,387. Speculum and medicine distributor. Martin Bohlig, St. Paul, Minn.

681,494. Chin rest for ophthalmometers. John E. Chambers, Chicago, Ill.

681,622. Respirator. Harvey S. Cover, South Bend, Ind.

681,498. Separator for cellulose. Robert Dietrich, Merseburg, Germany.

681,631. Bath cabinet. Warren A. Durrin, Woodville, Wis.

681,483. Sterilized surgical dressing. Henry C. Lovis, New York City.

681,568. Making ammonium ichthyol sulfonate. A. C. McLaughlin, Austin, Tex.

681,505. Quinin methyl-dihydrazin perchlorate and making same. Max Meyer, New York City.

681,331. Combination massage roller and exerciser. Geo. W. Milkman, New York City.

681,333. Spitting pot. John F. T. Mjoen, Christiania, Norway.

681,338. Ether inhaler. Gustav Otto, Jersey City, N. J.

681,463. Apparatus for treating diseases. H. E. Waite, New York City.

681,289. Apparatus for rendering water pure. J. S. Wrightnour, Oil City, Pa.

34,994. Design, inhaler. Moriz Bauer, Vienna, Austria-Hungary.

34,995. Design, bag for ice or water. C. W. Meinecke, Jersey City, N. J.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., August 22 to 28, 1901, inclusive:

John R. Clark, contract surgeon, from duty at the General Hospital, Presidio of San Francisco, Cal., to his home in New York City, for annulment of contract.

Guy L. Edie, major and surgeon, U. S. A., sick leave extended.

William R. S. George, contract surgeon, to proceed to Ponce, P. R., for duty during the absence on leave of Captain Benjamin Ten Eyck; on completing this duty he will rejoin his proper station, San Juan, P. R.

William O. Owen, major and surgeon, U. S. A., leave of absence granted.

James Reagles, contract surgeon, leave of absence from the Department of the Columbia extended.

Roy A. Wilson, contract surgeon, previous orders requiring him to proceed to San Francisco, Cal., en route for duty in the Philippines revoked.

Navy Changes.

Changes in the Medical Corps of the Navy, week ended Aug. 31, 1901:

P. A. Surgeon R. M. Kennedy detached from the *Bennington* when placed out of commission, and ordered home.

P. A. Surgeon D. H. Morgan, detached, from the *Monongahela, and ordered to the* Naval Hospital, Newport, immediately, for treatment.

Asst.-Surgeon R. T. Atkinson, detached from the Washington Hospital, and ordered to the *Wabash,* immediately.

Asst.-Surgeon A. W. Balch, detached from the *Wabash* and ordered to the *Monongahela,* immediately.

Medical Inspector D. N. Bertolette, detached from the *New York and ordered to the Brooklyn* as Fleet Surgeon.

Surgeon J. E. Gardner, detached from the *Brooklyn* and ordered to the *New York.*

Asst.-Surgeon J. M. Brister, assigned to the Marine Brigade, Asiatic Station.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service, for the seven days ended Aug. 29, 1901:

Surgeon Preston H. Bailhache, detailed as delegate to represent the service at the meeting of the American Public Health Association, to be held in Buffalo, N. Y., September 16-20.

P. A. Surgeon A. C. Smith, granted leave of absence for one day, Aug. 21, 1901, under paragraph 181, Regulations, U. S. Marine-Hospital Service.

A. A. Surgeon W. C. Todt, granted leave of absence for 14 days *from August 18.*

Hospital Steward F. S. Goodman, granted leave of absence for thirty days from September 1.

Hospital Steward C. A. Warhanik, granted leave of absence for thirty days from September 4.

Hospital Steward L. P. Hall, relieved from duty at Boston, Mass., and directed to proceed to Vineyard Haven, Mass., and report to medical officer in command for duty and assignment to quarters.

RESIGNATION.

Hospital Steward C. A. Warhanik resigned, to take effect Oct. 4, 1901.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended Aug. 31, 1901:

SMALLPOX—UNITED STATES.

California: San Francisco, Aug. 11-18, 1 case.

Illinois: Freeport, Aug. 17-24, 1 case.

Maine: Aroostook County, Aug. 2, present.

Massachusetts: Boston, Aug. 17-24, 5 cases, 2 deaths.

New Jersey: Newark, Aug. 17-24, 5 cases, 2 deaths.

Pennsylvania: Philadelphia, Aug. 17-24, 7 cases, 1 death; Pittsburg, Aug. 19-24, 1 death.

Wisconsin: Green Bay, Aug. 18-25, 3 cases.

SMALLPOX—FOREIGN.

Brazil: Rio de Janeiro, July 14-28, 64 deaths.

Canada: Woodstock, District, Aug. 2, 80 cases.

Colombia: Panama, Aug. 12-19, 7 cases.

Ecuador: Guayaquil, June 12-22, 3 deaths.

Great Britain: London, Aug. 2-10, 11 cases, 1 death.

India: Bombay, July 23-30, 2 deaths; Calcutta, July 20-27, 4 deaths; Madras, July 20-26, 3 deaths.

Italy: Messina, Aug. 3-10, 5 cases, 2 deaths; Naples, Aug. 4-11, 123 cases, 26 deaths.

Japan: Osaka and Hiogo, July 22-27, 1 case.

Netherlands: Rotterdam, July 27-Aug. 10, 3 cases.

Spain: Malaga, July 1-31, 2 deaths; Valencia, July 27-Aug. 3, 11 deaths.

Straits Settlements: Singapore, July 13-20, 1 death.

Uruguay: Montevideo, July 6-20, 43 deaths.

YELLOW FEVER.

Brazil: Rio de Janeiro, July 14-20, 7 cases.

Cuba: Havana, Aug. 10-17, 1 case, from Fincia Riquena.

Mexico: Tampico, July 26-Aug. 2, 2 cases, 1 death; Vera Cruz, Aug 10-17, 6 cases, 2 deaths.

CHOLERA.

India: Bombay, July 23-30, 5 deaths; Calcutta, July 20-27, 22 deaths; Madras, July 20-26, 1 death.

Japan: Yokohama, July 31, 1 case.

Java: Batavia, July 13-20, 10 cases, 6 deaths.

PLAGUE—INSULAR.

Philippines: Manila, July 6-13, 12 cases, 10 deaths.

PLAGUE—FOREIGN.

Brazil: Rio de Janeiro, July 20-28, 3 deaths.

India: Bombay, July 23-30, 113 deaths; Calcutta, July 20-27, 16 deaths; Karachi, July 21-28, 5 cases, 7 deaths.

Educational Number

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Original Articles.

A METHOD OF TEACHING RELATIONAL ANATOMY.*

C. M. JACKSON, M.S., M.D.
ASSISTANT PROFESSOR OF ANATOMY, UNIVERSITY OF MISSOURI.
COLUMBIA, MO.

For many centuries the science of anatomy has been universally recognized as the foundation for the study of medicine. It is, therefore, evident that the best method of studying and teaching this fundamental subject is a problem of great importance. To anatomy belongs the credit of being the first science to adopt the objective, or laboratory method of study. Anatomists long ago insisted that the only way to gain real knowledge of anatomy is by dissection. The art of dissection has therefore been diligently cultivated for many centuries, and the practical limit of its development was reached nearly one hundred years ago. Indeed, the anatomists of the present day are perhaps inferior in the art of dissection to those of the previous generation. This is undoubtedly due to the increased attention paid in recent years to the related subjects of comparative anatomy and embryology, and to the new world of facts revealed in microscopic anatomy or histology. The effect of these studies has been to revolutionize the science of anatomy, so that its present scope and significance are perhaps better expressed by the more comprehensive term, morphology.

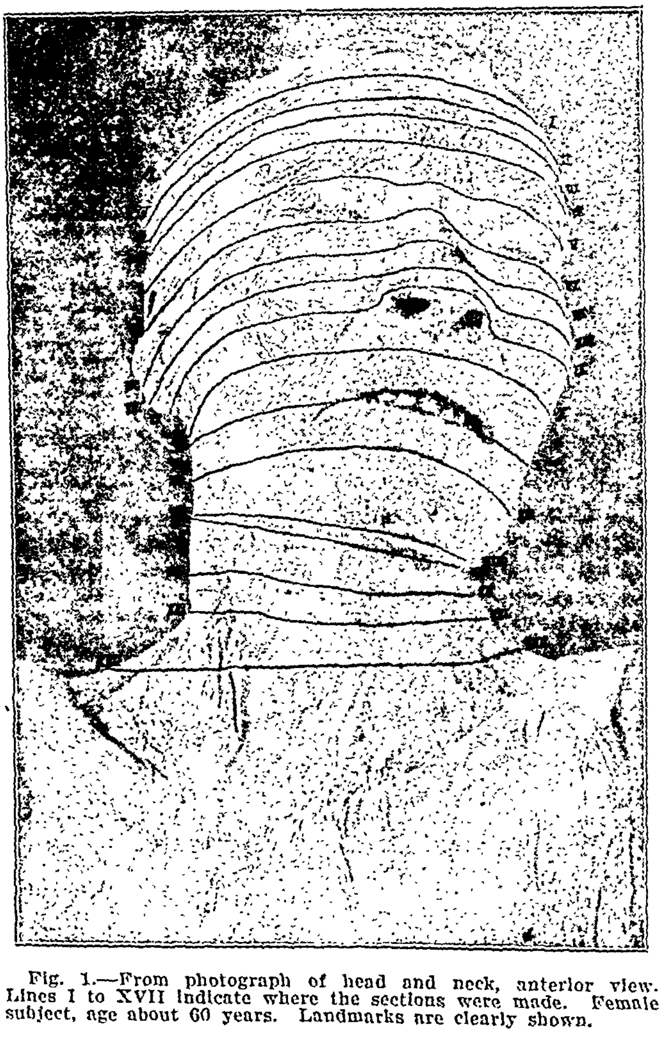

Fig. 1.—From photograph of head and neck, anterior view. Lines I to XVII indicate where the sections were made. Female subject, age about 60 years. Landmarks are clearly shown.

Yet, with all the time spent in dissection, and in spite of the flood of light thrown upon the subject by recent advances in comparative and microscopic studies, we still fail to accomplish the desired end. The ambition of the student of anatomy is, or should be, the ability to *see through* the body, perceiving in the mind's eye all the structures included therein, and their complicated relations to each other. This ability the student must gain somehow, if he is to achieve real success in medicine or surgery; for upon this knowledge are based both physical diagnosis and surgical procedure.

Bearing this in mind, and also the fact that the average medical graduate is very deficient in his knowledge of anatomy from this standpoint, it must be admitted that there is something wrong with our present and past methods of teaching the subject. Wherein do we fail? The reason, it seems to me, lies in the fact that in all the time we devote to the study of the various branches of anatomy—comparative anatomy, osteology, dissection, descriptive anatomy, histology, embryology, etc. — in all these branches we spend practically our entire time upon the study of the individual organs and organ-systems, while practically no time is spent in considering the anatomical relations of these organs to each other, and to the surface of the body. To me it seems clear that so long as this is true, the student's knowledge of anatomy, at least from the standpoint of medicine, must necessarily remain incomplete and unsatisfactory.

This being true, the question arises: What method can we use to study what we may term the relational anatomy of the various organs? Take the liver, for example. How shall we proceed to study the exact spatial relations of the liver to the neighboring structures, such as the stomach, kidneys or lungs; and how shall we determine its relations to the surface of the body? It is evident that the ordinary methods of dissection give us very imperfect knowledge in this regard, for in the very act of dissection we must necessarily remove those surrounding structures whose relations it is so important to determine. There is, I believe, only one way in which relational anatomy can be thoroughly, systematically and satisfactorily studied; and that is by means of sections made in various planes in the different regions of the body. Only by this method are the organs made visible in their actual spatial relations to each other. This is by no means a new method of investigation. It has long been used in histology and embryology, where objects are too small or too delicate to be studied otherwise. It has also been applied, to a very limited extent, to the gross anatomy in a few special regions of the human body.[1] But on account of certain difficulties in the application of the method, it has never come into general use. The method which I have to present, therefore, while old in principle, is new in its application; since, so far as I am aware, in no other laboratory of anatomy is it made a regular part of the system of instruction.

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* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section: W. J. Mayo, H. O. Walker, and A. J. Ochsner.

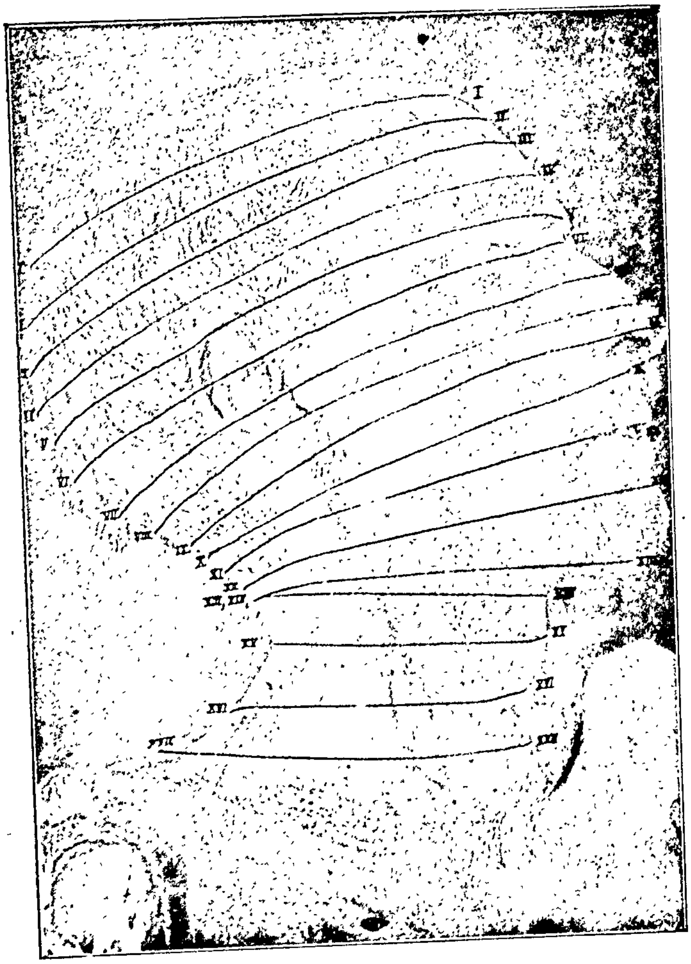

Fig. 2.—Lateral view of the head and neck, photographed from the same subject as Fig. 1.

The plan which I have worked out for instruction in relational anatomy involves the following consecutive steps: 1. Hardening of cadavers. 2. Study of surface form. 3. Making of sections. 4. Study and drawings of sections. 5. Reference to literature. 6. Written report of results.

Hardening of Cadavers.—Suitable cadavers, selected especially for this work, are injected, not with the usual embalming liquids, but with 50 per cent. formalin, that is, pure formalin (40 per cent. formaldehyde) diluted with equal volume of water. I inject about one gallon, or more if possible, of this liquid into the arteries, usually through the common femoral. This may be followed in a few hours by a second colored injection mass, if desired. Within a few days all the softer tissues of the body become thoroughly hardened. Every organ is thus fixed perfectly in the exact shape and position it occupied during life. Sections may be made at any time after one week. If the cadaver is to be kept some time before using, all that is necessary is to apply vaselin to the skin and wrap with oil muslin bandages to prevent drying. The cadaver will then preserve perfectly, at any temperature, for an indefinite time.

Study of Surface Form.—For the work in relational anatomy, the class—which has previously completed its dissections by the ordinary method—is divided into groups of two, who work together. Two are assigned to the head and neck, two to the thorax, two to the abdomen, and two to each arm and leg. The first thing that each student does is to make a very thorough study of the surface form of the region to which he is assigned. Special stress is laid upon the landmarks, whose relations to the underlying structures are of great importance. The student makes careful measurements, and records his observations in a note-book kept for the purpose. A mounted skeleton, an Auzoux manikin, and various other models are at hand for comparison.

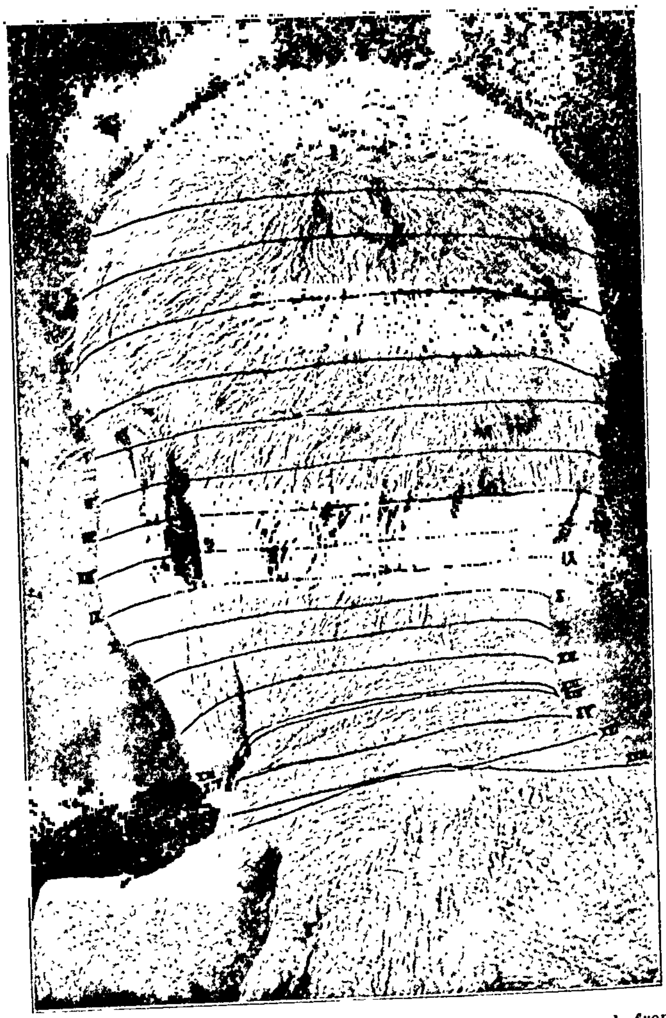

Fig. 3.—Posterior view of the head and neck. Photograph from same subject shown in Figs. 1 and 2.

At this point, photographs are taken showing different views of each region. A set of these photographs is supplied to each student, and they serve a double purpose. In the first place, they furnish an exact picture record of the surface form; and secondly, by means of reference lines drawn later in ink, they serve to indicate the exact level and plane of each section taken. This is a very important feature. In case the photographs were not obtainable, it would be necessary to make very careful outline drawings, upon which the landmarks and reference lines would be shown.

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[1] Braune, Macewen, Dwight, and others, have made sections for the investigation of relational anatomy, chiefly by the freezing method.

Making of Sections.—Having carefully studied the surface form, and having a record of his observations in notes and photographs, the student now proceeds to cut sections through the body in the desired planes. As soon as made, the sections should be thoroughly washed with water, taking care not to displace any organs. Blood-clots, fecal material, excess of formalin, etc., are thus removed. Cross sections of the extremities are best made at definite intervals, every half inch or inch. In the head, the sections need not be more than one-fourth inch apart. In the trunk, sections should be somewhat thicker. I have found that it facilitates the handling of sections, and especially the problem of determining the exact level of a given structure, if the sections in the trunk region be made to pass through the intervertebral disks. Then each slice corresponds to the body of a vertebra. It is remarkable how well sections made by this method will hold together, even when they pass through the intestines. Occasionally a piece becomes loose or detached, but it is easily secured in place by a stitch of thread. In the head and trunk, and a few special regions, besides cross sections, coronal and sagittal sections are also necessary. Wherever possible, consecutive sections are left attached to each other at one edge by the skin. The sections are made with a long butcher knife and an ordinary butcher's saw (for bones). If the tissues are thoroughly hardened, the sections are easily and smoothly made.

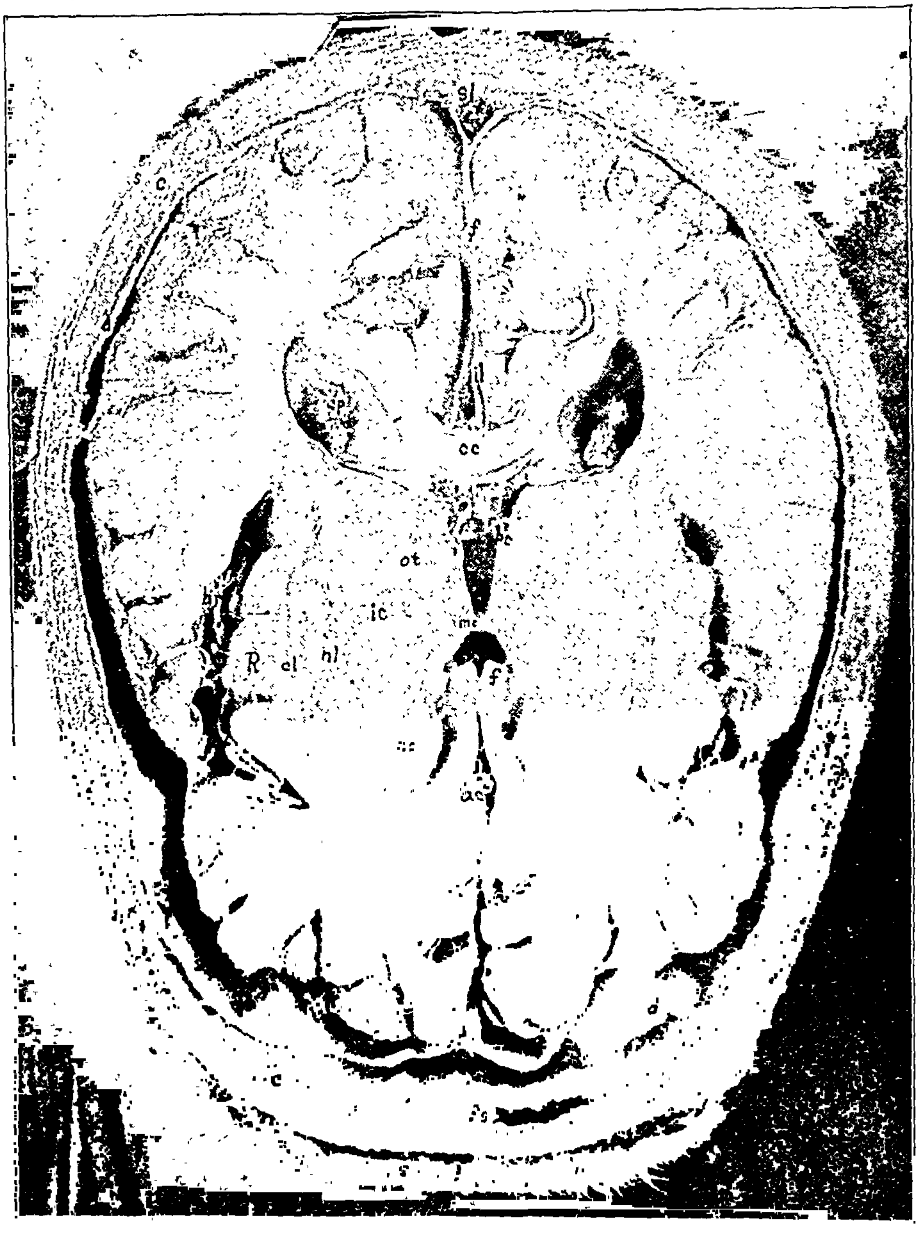

Fig. 4. From photograph showing horizontal section through the head, viewed from above, at the level indicated by reference line III, in Figs. 1, 2 and 3. Section passes through the frontal, temporal, and occipital lobes, and the Island of Reil. *s*, Scalp; *c*, cranium; *d*, dura mater; *p*, pia mater; *fs*, frontal sinus; *f*, falx cerebri; *sl*, sup. longitudinal sinus; *il*, inferior longitudinal sinus; *ac*, anterior cerebral arteries; *br*, branches of middle cerebral arteries; *r*, Island of Reil; *f*, fornix; *cc*, corpus callosum; *cp*, choroid plexus in lateral ventricle; *mc*, middle commissure (in 3d ventricle); *pc*, posterior commissure; *ot*, optic thalamus; *ic*, internal capsule; *nc*, nucleus caudatus; *nl*, nucleus lenticularis; *cl*, claustrum.

In this connection, I may remark that this formalin method offers several advantages over the method of frozen sections. No freezing is necessary; the sections are made more easily and smoothly; and, finally, they do not thaw out and become loose or flabby upon handling. This method is also superior to all embedding methods, since not only the surfaces of the sections, but also the structures between, are accessible for examination. In fact, it combines the advantages of dissection with those of plane sections.

In some cases it is advantageous to *combine* the formalin and freezing methods by first hardening the cadaver thoroughly with formalin, as above outlined, and then making the sections by the freezing method.

Dr. Terry[2] has suggested that the bones be decalcified with acids, thus avoiding the use of a saw. This is perhaps admissible in the head region, where dense skeletal parts are so closely related to delicate organs; but elsewhere, I consider it desirable for the student actually to saw through the bones upon reaching them. The location and physical characters of the skeleton are thereby more firmly impressed upon his mind. Even through the head region, as the accompanying figures show, excellent sections can be made without decalcification, which is therefore necessary only when very thin sections are desired.

Study and Drawing of Sections.—After the sections are cut, the student begins the most important part of his work, viz., the study of the sections. Every structure which appears in each section must be identified, every nerve and blood-vessel followed. The position of the various organs with respect to each other, and to the surface, must be carefully observed and recorded in a note-book. The sections are studied first separately, and later collectively, by placing them together in their natural order. Finally, in order to impress the relations more strongly upon the student, he is required to make a careful outline drawing of each section. We have adopted for this work a method of drawing which makes it easy and at the same time very accurate. A piece of plate glass in an open frame is laid directly upon the section which is to be drawn. Then, by means of pen and India ink, the outlines are traced, showing all the organs visible through the glass, in their exact relations. When the ink is dry, a sheet of drawing paper or bristol board of the proper size, is placed in the frame and fastened by an inner frame behind the glass which contains the ink outline (See Fig. 8). Upon holding up the frame toward the light, the ink outline shows through distinctly, and can readily be traced with a pencil upon the drawing paper. At night the drawings are readily transferred by placing the frame over an electric light. The principle of tracing upon glass was suggested by one of my students, the drawing frame being an invention of my own. The most difficult and important part of the drawing, an accurate outline of the various structures, is now upon the drawing paper. The pencil outline is retraced with ink, and the details are readily filled in with ink, water colors, etc., according to the taste of the individual student. These drawings are very highly prized by the students, and, indeed, form a valuable set of plates for future reference.

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[2] Proceedings of the Association American Anatomists, W ington, D. C., 1900.

Every structure appearing upon these drawings is, of course, carefully labeled, and the reference line on the photograph showing the plane of the section is also indicated by numbers.[3] For the sake of uniformity, every drawing should represent the *upper surface* of the section, unless there is a special reason for the contrary. Moreover—and this is a point upon which I insist strongly—every section should be studied and drawn in the position it would occupy if the cadaver were facing the student, that is, with the *ventral* body wall *nearest*, and the dorsal wall on the further side of the drawing. Some uniform method of position is necessary, both in studying and in drawing, otherwise no clear and permanent mental images can be formed. How could one form any idea of geographical location from maps, if the top of the map sometimes indicated north, sometimes south, sometimes east, and sometimes west? The reason for placing the dorsal side of an anatomical figure toward the top of the page is because that represents (when the drawing is held upright) the typical vertebrate position: dorsal surface upward and ventral surface downward. Since a thorough study of human anatomy, is impossible without reference to comparative anatomy, the same standard of position should be adopted for both.

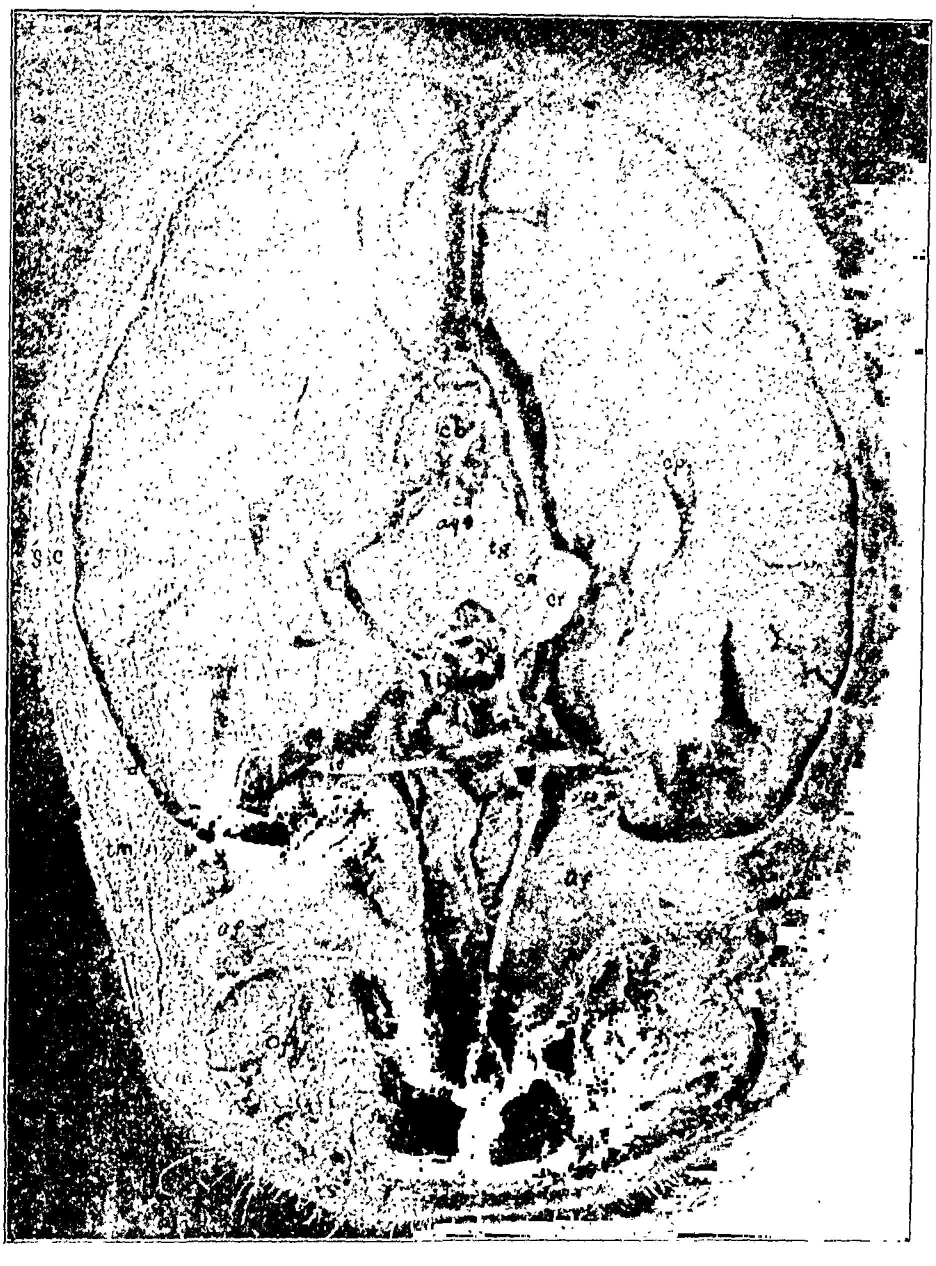

Fig. 5.—From photograph showing horizontal section, viewed from above, through the head at the level indicated by line IV in Figs. 1, 2 and 3. This section passes through the temporal and occipital lobes, and the upper part of the orbital cavity. *s*, Scalp; *c*, cranium; *tm*, temporal muscle; *d*, dura mater; *f*, falx; *t*, tentorium; *sl*, sup. long. sinus; *il*, inf. long. sinus; *of*, orbital fat; *c*, ethmoidal cells; *fs*, frontal sinus; *cg*, crista galli; *ob*, olfactory bulb; *af*, anterior fossa; *ic*, internal carotid; *cp*, choroid plexus of lateral ventricle; *cq*, corpora quadrigemina; *aq*, Sylvian aqueduct; *sn*, substantia nigra; *cr*, crusta; *tg*, tegmentum; *cb*, cerebellum.

Reference to Literature.—The student has now studied and compared his sections, and finished his drawings of them, but still his task is not completed. He has yet to compare his own work with the results of other investigators. To do this he is required to look up references concerning the relational anatomy of the region in the various books and periodicals in the department library. He takes notes here also, and finds, often to his astonishment, that the authors sometimes disagree with each other, and also with the facts as he *knows* them to be in his own sections. Thus he learns the important lesson that the real source of knowledge is Nature, not books.

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[3] A blue print copy of every drawing, and a duplicate of each photograph, are preserved by the laboratory as a record for reference in the future.

Written Report of Results.—Finally, in order to get his knowledge arranged in a systematic way, the student is required to write a report in which he sums up briefly and clearly, the results of his own observations, and compares them with the statements found in the literature. The writing of this paper, which is, of course, accompanied by the explanatory photographs and drawings, forms an excellent review of the entire subject, and puts the work of the student in a convenient form for future reference.

Besides the thorough study of one region, according to the method outlined, the student is required to review the remainder of the body from sections already made. Thus he becomes familiar with the more important topographic relations of the entire body. More advanced work in topographical anatomy is assigned to students who wish to make a special study of the subject.

In conclusion, allow me to suggest that this method for the study of relational anatomy will be of the utmost value to practitioners who are not located conveniently near anatomical laboratories, but still desire to devote some time to the study of anatomy, especially in its relations to surgery. The method is simple, the apparatus inexpensive, the material keeps indefinitely, and the knowledge gained from a study of the body in this way can hardly fail to be of great practical value. Drying of the sections is the only trouble to be guarded against. This may be prevented, 1, by placing a cloth wet with some slightly antiseptic liquid between every two sections, when not in use; 2, by wrapping the entire part in water-proof cloths; 3, by keeping the sections in an air-tight receptacle, either box, can or jar. Formalin sections dry much less rapidly than alcoholic specimens, however, and can be exposed to the air for two or three hours without damage.

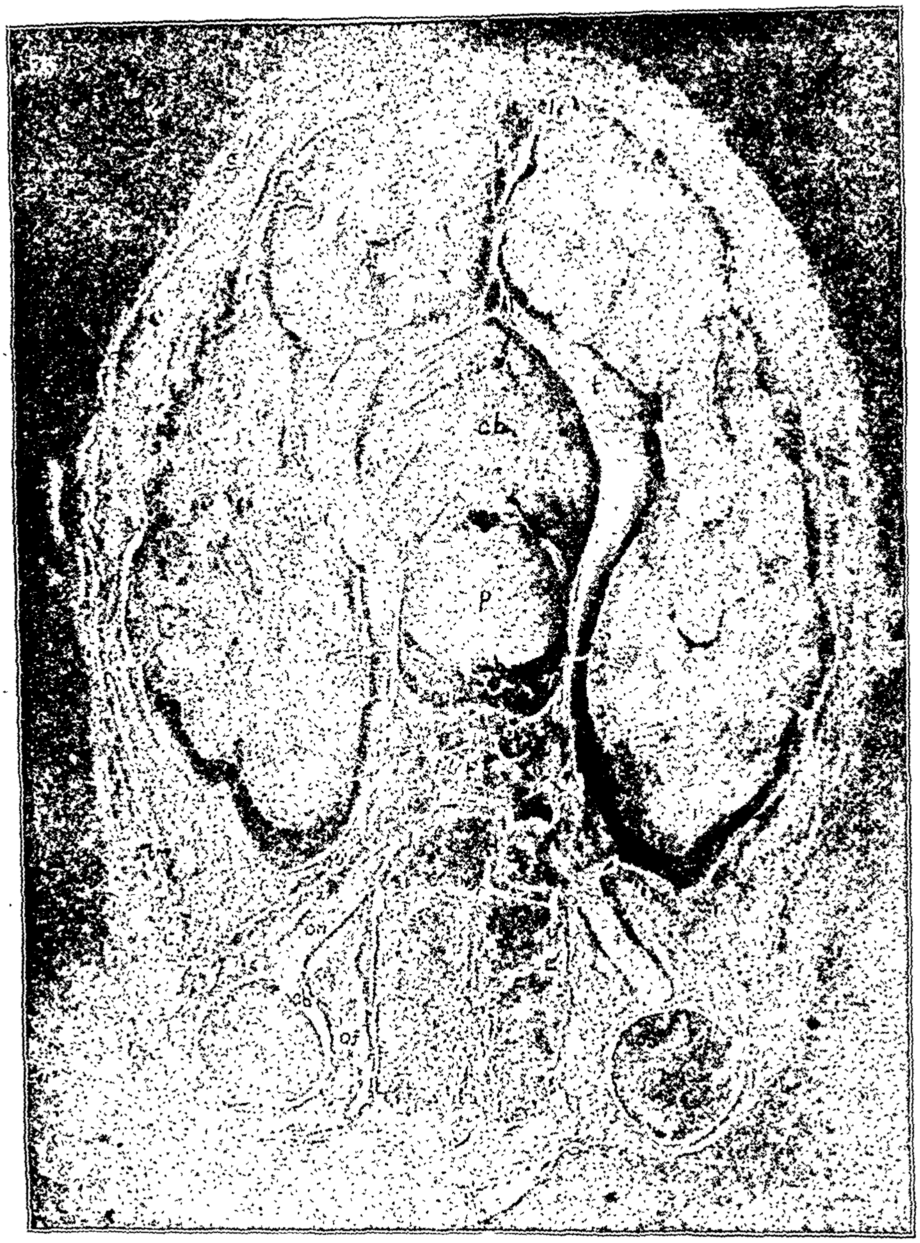

Fig. 6.—From photograph showing horizontal section, viewed from above, of the head at level indicated by line V in Figs. 1, 2 and 3. Section passes through temporal and occipital lobes, and just above the center of the eyeball. *s*, Scalp; *tm*, temporal muscle; *c*, cranium; *n*, nose; *f*, falx; *sl*, sup. long. sinus; *il*, inf. long. sinus; *t*, tentorium; *cb*, eyeball (retina shrunken); *of*, orbital fat; *on*, optic nerve; *e*, ethmoidal cells; *s*, sphenoidal cell; *ic*, internal carotid; *pt*, pituitary body; *b*, basilar artery; *p*, pons varolii; *aq*, aqueduct of Sylvius; *cb*, cerebellum. (Figs. 7 and 8 in following article.)

An Italian Professor Exonerated.—Professor D'Antona, of Naples, was recently accused by the relatives of having caused the death of a patient by overlooking a gauze compress in an operation on the liver. A committee of investigation was appointed by the Senate, who have honorably exonerated the surgeon from the slightest blame. The patient had malignant disease of the liver, and in operating, a gauze drain was purposely left. The patient left the hospital contrary to his wishes, and her death soon after was attributed to the gauze.

Rovsing's Ablation of the Stomach. — In Rovsing's patient the discovery of the carcinomatous condition of the stomach was a laparotomy surprise. He found it necessary to remove the entire stomach with a portion of the esophagus. The stump of the latter slipped up through the diaphragm and union with the duodenum proving impracticable, he sutured it to a loop of the jejunum, 40 cm. from the duodeno-jejunal angle, inserting the esophagus in a longitudinal incision 12 cm. in length. The patient showed signs of collapse at first, and slight phlebitis was observed during convalescence. Recovery was uneventful.

THE AIM OF MEDICAL EDUCATION, AND ITS RELATION TO RESEARCH WORK, BY MEDICAL STUDENTS.

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The work of the medical colleges twenty years ago was such that almost any change in it was a change in the direction of improvement. The result was that as changes were suggested, they were hailed with delight, and adopted as rapidly and as thoroughly as the different schools could accommodate themselves to them, until it has now almost become a habit to accept as good and desirable any innovation in medical college work which may be suggested. The last two decades have seen a general extension of the time of medical study from two courses of five months each to four courses of eight or nine months each; this period has seen introduced into the curriculum many branches of study, previously never attempted; it has seen the standard of admission raised, and the requirements for the degree, and for the right to practice made more stringent. During the same time the subject of laboratory work has practically had its whole development in our American schools, excepting only certain work in dissection, and some very rudimentary *chemical work*. The didactic lectures of the older days have been severely criticised, and the recitation method has found many advocates. and some application. So numerous and far reaching have these changes been in so short a time, that we must admit that we are in the midst of "boom times" in medical education. And "boom times" are not without their dangers; their products are not always solid. A mere glance at the changes show that they involve standards of admission to professional study, subject matter of such *study, methods of teaching*, and the relations of the profession to the community. Each of these factors is complex; it has many sides and many relations, pedagogical, professional, and social, not all of which are apparent at a glance, and some of which can only be determined as time and experience reveal them. It would seem, therefore, wise to stop occasionally and review the situation broadly and compare our position with fundamental landmarks, to take our bearings and determine if possible if our progress is all that we fondly think it to be.

I propose here to take bearings from just one fundamental landmark, for the light which it may throw on the situation, and compare it with one proposed innovation. The landmark to which I refer is the one which defines the province of the physician and thereby establishes the functions, duties, and scope of the medical college, the place where he is prepared for his life work. The province of the physician is to prevent and relieve sickness, and to prolong life. To perform his functions he must be familiar with the nature and cause of disease—pathology; have the skill and means for determining its various phases—diagnosis; be armed with the best means for combating it—therapy; and be possessed of good professional judgment to guide him in his art. His pathology must be based upon anatomy, physiology and chemistry, the two former of which must be acquired within the walls of the medical school, simply because they have not yet become subjects of such widespread study for purposes of general culture that they can generally be acquired in other institutions, and

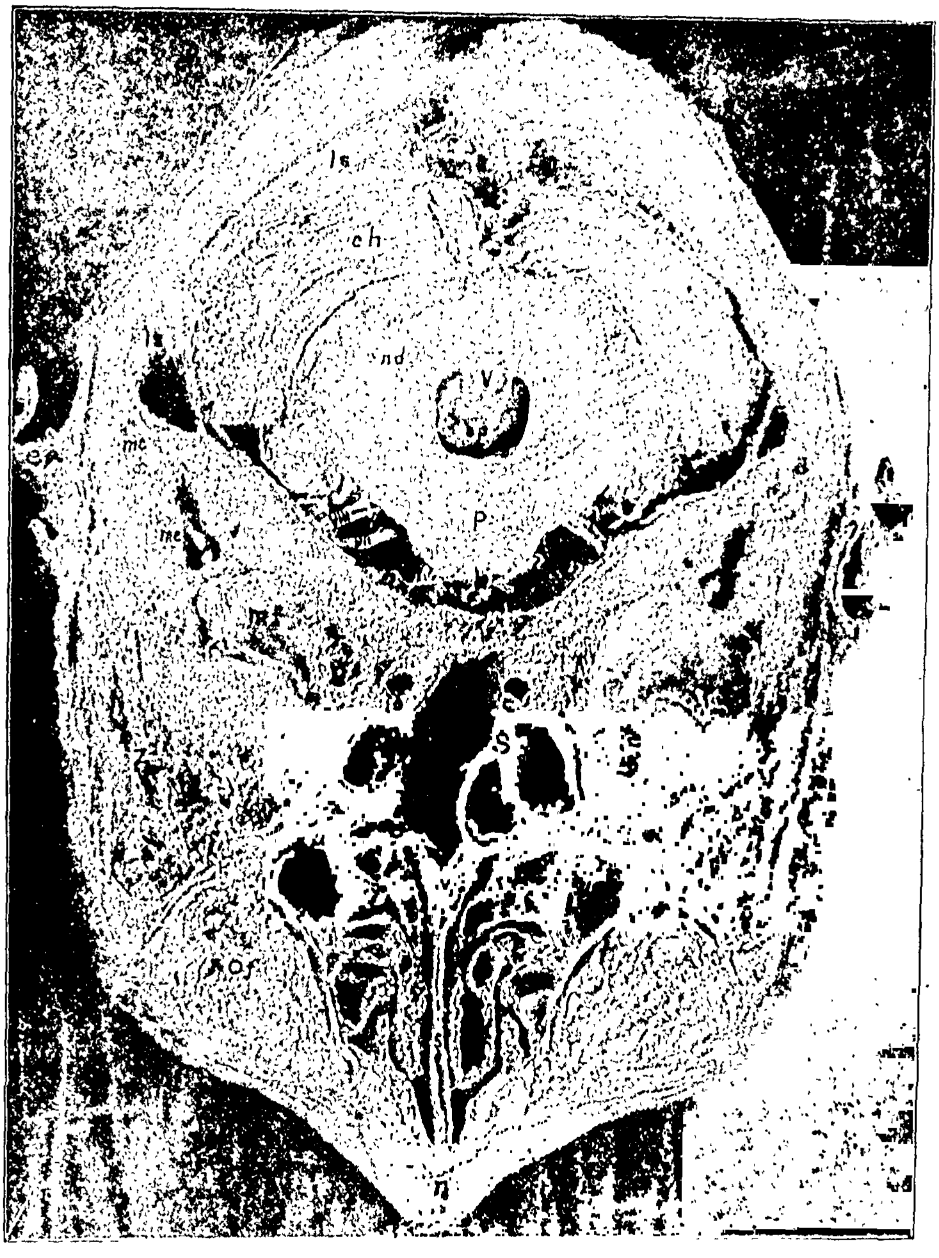

Fig. 7.—From photograph of horizontal section, viewed from above, of the head at the level of line VI, in Figs. 1, 2 and 3. This section passes below the cerebrum, striking the cerebellum middle ear and lower part of the orbit. ygomatic arch; *n*, nose; *of*, orbital fat; *s*, nasal septum; *v*, vomer; *c*, trum of Highmore; *s*, sphenoidal cells; *io*, internal carotid; *b*, basila ganglion; *mf*, middle fossa; *mo*, middle ear, showing chain of bones; lateral sinus; *ch*, cerebellar hemisphere; *nd*, nucleus dentatus; *v*, vermis; *cp*, choroid plexus of the 4th ventricle; *p*, pons varolii; *VII*, 7th cranial nerve; *VIII*, 8th cranial nerve.

not because they are subjects of exclusive medical interest or use. For the same reason that chemistry, to have its truly medical aspect emphasized, is still taught in medical schools, anatomy and physiology will probably also continue to be taught there even when their study in institutions of general learning becomes much more extensive than it is now. The pathology of the medical student must always be taught in the medical schools. It constitutes a very large percentage of the subject matter of the curriculum, and demands a large part of the student's time. The subject is divided among many chairs, the etiological portions going to one or more departments, the general and comparative aspects to other departments, while special features are presented by the so-called practical chairs, or what should more properly be spoken of as the philosophical chairs. In all of this work the student is gathering data, is securing information, of the importance of which he is but illy qualified to judge.

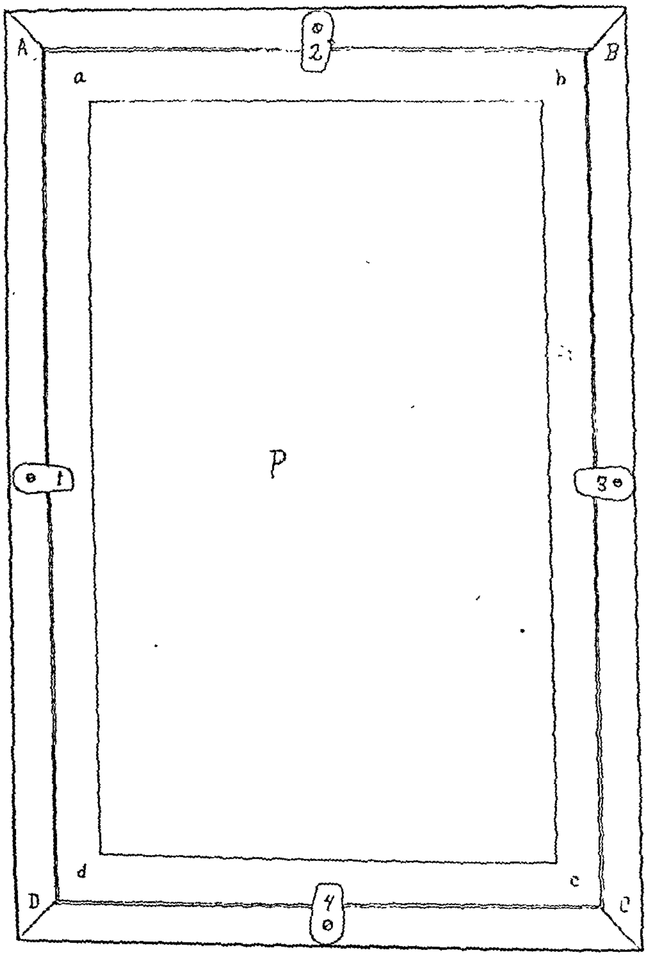

Fig. 8.—A diagram of the Drawing Frame. *abcd*, The *outer* frame, which resembles an ordinary picture frame, in which the glass and drawing *paper are placed*; *abcd*, the *inner* frame, which fits into the outer *frame behind* the glass and drawing paper, holding them firmly in place: 1, 2, 3, 4, wooden "buttons," fastened each by a screw into the outer frame, and serving, when turned as in figure, to hold the inner *frame tightly* behind the glass and paper: *p*, space occupied by the glass and drawing paper.

Having acquired a knowledge of the nature of disease, he *is next* introduced to the means of combating it. He is shown that therapy includes drugs, dietetics, and surgical, psychic and social factors, and the mastering of the data of this vast armamentarium is a work truly *prodigious*. And thus far, the work has still been wholly a collection of data. Now comes the work of the philosophical chairs whose duty it is to present the subject of diagnosis; to show the correlations of the data of pathology and the data of therapy, and to crown all with the training of the professional judgment. The art of diagnosis is necessary because diseases do not come labeled. Diagnosis is a purely logical procedure. In each of the great departments of human thought, the logic of that department has peculiarities of its own, and so the logic of medicine is peculiar to it. Certain methods of reasoning are especially fruitful of results; certain fallacies are apt to recur frequently, and to use the one and avoid the other requires training. It is convenient to group the peculiarities of medical reasoning under the term "medical mode of thought." I can not here undertake to prove the truth of these latter assertions, but am content to refer any who question them to Bain, who in his chapter on the Logic of Medicine, in his "Inductive Logic," has fully and conclusively set the matter forth.

Among the more recent innovations in medical education upon which divergence of opinion and practice exists, is that of completely separating the teaching of the basic sciences, usually presented *in the first two* years of work, from the remainder of the instruction. Closely associated with this, is the tendency to offer to undergraduate medical students, opportunities for original research in these basic sciences. It has been said that, "When a physician makes a diagnosis he follows precisely those methods of observation, comparison and experiment which are employed in original research." Granting the verbal accuracy of the language, the statement is still misleading. The statement is in principle true of every investigation from original research to common gossip. It is, therefore, too broad to be of any peculiar utility. It is misleading *in that it implies that in original* research, and in diagnosis the methods of observation, comparison, and experiment are identical, and that the fulness of diagnosis, conclusion, and that the end of research, truth, more general than specific, are both reached by similar acts of judgment. So long as the logic of medicine has its own peculiarities, its methods of observation, comparison and experiment can not be absolutely identical with those of *anything* else, not even with those of one of its basic *sciences. But it is in the latter* parts of the two methods of *reasoning that* the great differences occur. I shall endeavor to make this appear by analyzing the two *processes* of original research and medical diagnosis. Original *research* has for its object the determining of new truths of a more or less general character. The new truth *may first* exist merely as a creature of the imagination, an hypothesis. This hypothesis is then subjected to *verification* by experiment and observation. If *the experiments* and observations confirm *the hypothesis* so fully that no *alternative or modifying* hypothesis can be conceived of to limit the original hypothesis, that original hypothesis is accepted as a truth, but not until it is so *completely verified*. New truths may also be derived by direct comparison of data established by observation and experiment. A characteristic feature in research work is deliberation. The *supposed* new truth waits for its announcement, *certainly* at least for its acceptance, until a sufficiency of data has been collected to establish it beyond doubt. As Huxley[1] says: "There is *one* guiding rule by which a man may always find this path [to truth] and keep himself from straying when he has found it. This *golden rule* is—give unqualified *assent to no propositions* but those the *truth* of which is so clear and distinct that they can not be doubted." Any so-called research less critical is unworthy of the name. It follows, therefore, that a research must often wait, and wait indefinitely for the collection of the necessary data to round it out, and bring forth a just conclusion. A so-called conclusion to an incomplete research, hedged with the adjective "tentative" is no conclusion at all; it carries no responsibility. The time element therefore is an important feature in original research, and the time may be indefinitely prolonged. In medical diagnosis the problem is to determine the state of affairs in a given patient. The particular methods of obtaining the data are those peculiar to medical investigation. When obtained these data are often insufficient to afford a positive basis for any conclusion. Occasionally, conditions are such that time may be spent waiting for additional data, but much more frequently the decision must be made at once, for action is demanded, and that action is determined by the decision as to the meaning of the data. Frequently, it is quite impossible to obtain a sufficiency of data, because original research in correlated branches of knowledge has not yet formulated laws governing the conditions. But nevertheless a conclusion must be made, for action is necessary. The time element is here important also but the time must be short, or life may be the forfeit. It follows from this, therefore, that the tentative conclusion is common in diagnosis, and unlike the tentative conclusion in research, it is one involving great responsibility. Inasmuch then as tentative conclusions must be made in diagnosis, and as it is essential that those diagnoses be as accurate as possible, great care must be exercised in the methods of thought used in reaching these conclusions. To this end we have recourse to the Logic of Medicine, which has become the logic of medicine, precisely because experience has shown that it is the most potent in reaching the truth under such circumstances. The "medical mode of thought" therefore ought to be inculcated throughout the whole of the medical student's career. When the diagnosis is made, it must then be compared with the data of therapy, in order that a second conclusion may be reached, and this second conclusion is the one which formulates the specific action to be taken, and in making it, psychic and social factors must be considered as well as the purely medical, and here again the "medical mode of thought," the trained professional judgment, comes into action.

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[1] On Descartes' "Discourse."

So far as research work trains observation it is good, but powers of observation can be trained equally well on pulse and tongue, facies and feces, as with the aid of balances and microtomes; so far as research work trains the judgment, it trains it in a bad direction for the young medical man. It tends to establish modes of thought which hamper rather than help him at the bedside. For anybody to do research work on problems formulated by some one else is largely child's play and hardly rises above the dignity of ordinary clerical work, while at the same time it tends to inculcate a sense of personal importance which is so far from the truth that it can not but be detrimental to its victim. The clinic is the field for medical thought and action. Resting upon its basic sciences, which are for its purposes tributary and subordinate, medicine has a systematized knowledge of its own, extensive in scope, highly complex, difficult to acquire, and requiring the best efforts of the best intelligences for its highest use. The systematized, truly medical knowledge may be designated by the word clinicism, which is the true science of medicine. The time for the medical man to undertake research work is when his experience has become sufficiently ripe for him to formulate his own problems; then his research work will have some life in it; his problems should be clinical problems, and certainly there are enough of them to satisfy the most varied tastes. The importance of inculcating the medical mode of thought and training professional judgment, is, in my opinion, so great that I would have them meet the student at every turn in his medical college career, from the very day of his entrance, and to this end I would have the teachers of the so-called scientific branches of the curriculum associated, as far as possible, with clinical work, and urge them to put themselves in constant touch with clinical men, that they may impress upon the student the professional bearings of their tributary work. The medical course is short enough now; it is difficult to find time to present all that should be presented to the student, and there is certainly no time to let him stray after strange gods. It is the business of the medical student to receive medical knowledge and to be trained in its use; he is under no obligations to add to the sum total of medical or any other knowledge. To-day an overwhelmingly large percentage of the physicians of the country devote their whole time to the application of medical knowledge to individual patients. It is right that they should. It is what the community expects of them. It will continue to be so in the future. With the few physicians who do research work, it is a side issue, and their real work is this same application of medical knowledge to individual patients. Such medical students as wish to engage in research work should limit themselves to it, and not hamper themselves with practice and they will find that their medical brethren will welcome every contribution of knowledge which they send out. If legislation should be for the benefit of the greatest number, so ought education, and to this end the medical college should keep its prime duty ever before it. It is the function of the physician to practice medicine; it is, therefore, the duty of the medical college to train him for that work. Let us make physicians rather than scientists.

NECESSITY OF A PRACTICAL KNOWLEDGE OF DIETETICS, HYDROTHERAPY AND PHYSICO-MECHANICAL THERAPEUTICS.

THE NEED OF ESTABLISHING COURSES OF INSTRUCTION IN THESE SUBJECTS IN OUR MEDICAL SCHOOLS.

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Until very recently the profession has for the most part relied upon the administration of drugs for the alleviation and cure of disease—all other means except surgery being left to the abuse of charlatans and quacks. But it is the sign of the present state of scientific development, that the attention of the thoughtful has been called to the effects that may be obtained by agents not emphasized in books on materia medica, therapeutics, or in the pharmacopeia. The value of general hygienic conditions and of surroundings; the necessity of proper and systematic bodily exercise; the curative power obtained through the placing of the patient's mind in the proper psychological attitude; the importance of the use of a diet suitable to the case and to the individual; the bearing that heat and cold may have upon the bodily functions in general, and especially on the different parts of the human organism when intelligently applied; the efficacy of massage and electrical therapeutics—

all these are now recognized as forming important elements in the alleviation and cure of many pathologic conditions.

Since these means form so vital a part as therapeutic agents, it would seem that the time has come to consider the urgent necessity for the systematic teaching of their principles and the intelligent application of the most important and neglected of them. Broadly speaking, these would appear to be the subjects of dietetics, hydrotherapy, and physico-mechanical therapeutics.

The reasons for viewing these subjects mentioned as so extremely important are, that, in the first subject—dietetics—the question is involved of how life is sustained and nourished, with the laws that govern such a process—a fundamental proposition; in the second subject—hydrotherapy—the consideration is required of how the body and its parts are affected by three of Nature's most common and potent agencies, to whose modification we, and every form of matter, are more or less subject at all times—viz., heat, cold and water—the latter modified in temperature from the normal to one extreme or the other; in the third subject—physico-mechanical—is contained a pointed reference to the broad and universal truth, that the thing which has ceased to use or perform its functions has begun to die, that the exercise of function is one of the most potent factors in maintaining life, and that, if the individual is not able to maintain such exercise of himself, the question of some outward agency may help him to accomplish it, or that such agency may obtain for him in some way the physiologic results of such exercise, is a consideration the importance of which can not be overestimated.

In order to learn whether the necessity for the teaching of dietetics, hydrotherapy and physico-mechanical therapeutics was realized, and whether the need of such instruction was being met, the writer sent letters to the various medical schools and colleges throughout the United States, asking each for its bulletin, catalogue, or yearly announcement. Most of the institutions written to immediately responded. Upon examining the printed curricula of the different schools, it was found that the three subjects above referred to were for the most part given but small space in the general scheme of study, and in not a few institutions were entirely omitted from the course.

To get the voice of competent opinion from medical teachers (after learning the conditions as they were at the schools), the writer prepared a second letter, which he sent to the dean of each institution in the United States. The letter was as follows:

> Dear Doctor:—I would like to obtain your opinion of the importance of teaching medical students three subjects now neglected in medical education, viz.: 1, Hydrotherapy; 2, Medical Gymnastics and Massage; 3, Dietetics.
>
> The practical demonstration method of teaching these branches would not seem to burden the student, especially Medical Gymnastics, which would rather be a physical benefit and a mental rest.
>
> Hydrotherapy and other physical methods of treatment seem now to be almost a necessity in the armamenture of modern therapeutics. This branch and Dietetics are left to the nurse or to the caprice of the patient. A thorough and practical knowledge should belong to every physician. The practical and scientific knowledge of these three branches would put a check upon quackery and ignorance.
>
> Kindly answer enclosed questions, and oblige.

Accompanying this letter was a blank on which were printed five questions, as below. Over half of the representatives of the schools written to returned the blanks originally mailed, with complete answers written upon them. These replies fairly represent the consensus of opinion of the colleges and medical schools of the country, as they came from institutions of different types, both large and small. The questions were:

1. Are you in favor of including the subject hydrotherapy in the curriculum of medical schools?
2. If so, are you in favor of teaching by practical demonstrations in the hospital and dispensary, or by the didactic method?
3. Are you in favor of teaching medical students practical medical gymnastics and massage?
4. Do you consider the study of practical dietetics a necessary part of the student's education? The character and preparation of food, cooking, etc.? The physiology, pathology, and therapeutics of dietetics?
5. What would you suggest as the most practical method of teaching this branch? Practical demonstration or otherwise?

To the first question, out of 59 answering, 1 replied: "Not as an undergraduate study;" 2 replied: "No;" 39 replied in unqualified terms: "Yes;" and the balance answered that hydrotherapy was already being taught as a branch of general therapeutics, or that they advocated its so being taught, but not as a special subject by itself. In all of these replies, save two, the prime importance of the serious consideration of hydrotherapy is fully recognized.

To the second question, out of the same number of letters received, 3 gave no answer; 1 replied: "No;" 1 advocated the didactic method; 16 advised practical demonstration; and 38 suggested both practical and didactic methods as likely to afford the best results.

To the third question, 1 gave no answer; 1 was undecided, not having given the subject sufficient study; 1 replied: "Yes; not under these names, however, but as a sub-topic of general therapeutics;" 1 answered: "Desirable, but doubtful whether time is sufficient;" 2 said: "To a limited extent;" 46 wrote unqualifiedly, "Yes;" and 7 answered, "No."

To question No. 4, 1 gave no answer; 1, "In a limited way;" 1, "Business of the nurse," 1, "Not as a separate course;" 1, "Desirable, but can't see how it can be accomplished;" 1, "Questionable whether it can be introduced into four years' curriculum;" 1, "Character and preparation of food, yes; cooking, no;" 3, unqualifiedly, "No;" 49, unqualifiedly, "Yes."

To the fifth question, 16 made no reply; 3 said that dietetics is already sufficiently taught by didactic and practical methods in their institutions; 4 advocated lectures and didactic methods; and 36 preferred practical demonstration in the hospital, coupled with theoretical teaching.

On reviewing and analyzing these various answers, it will be seen that there is an overwhelming majority of those who favor the establishment of some method by which the subjects we are considering may be more carefully and systematically taught; and that the greater number of those who have replied to the questions propounded lay very great stress on the importance of teaching by practical and illustrative methods.

Together with these answers written on the printed slips, and categorically replied to, many letters were received, giving the personal opinion of the writers as teachers and professors. The following are included here, as showing that not only are dietetics, hydrotherapy and physico-mechanical therapeutics not sufficiently taught, but that there is a genuine and urgent demand on the part of trained medical educators for placing these branches in the curriculum of the schools:

David Streett, Dean of the Baltimore Medical College, Baltimore, Md., says:

> . . . There can be no question about the importance of teaching Hydrotherapy; indeed, such has been done a number of years, its importance in the medical curriculum growing each year; and of Dietetics there are few subjects of more intrinsic importance to the practitioner, as well as to the surgeon. As to Medical Gymnastics and Massage, I think they are less important than Hydrotherapy and Dietetics; still they eminently deserve a place in our medical curriculum, provided there be found time for their teaching. . . . I regret to state, in my judgment sufficient importance has not been attached to the thorough knowledge of these two subjects.

Victor C. Vaughan, Dean of the University of Michigan, favors instruction in these three subjects, and says:

> I know I talk three hours a week for three months on this subject, and give them a good grounding in the scientific principles of Dietetics. . . As to Hydrotherapy, our students get considerable instruction along this line. . . . We also give considerable instruction in Medical Gymnastics and Massage. . . .

One correspondent, Dr. A. F. Jonas, Dean of the Omaha Medical College, and President of the Western Surgical and Gynecological Association, writes:

> . . . I feel that the three subjects mentioned should occupy a first rank in our therapeutics; but, for some unknown reason, they have been neglected by our schools the world over. It is in the use of these particularly that "quackery" has obtained a large part of its capital stock. I am sure that if these subjects will be scientifically taught and properly applied by the profession, we will have added to our armamentarium most important factors for good.

H. G. Brainard, Dean of the College of Medicine, University of Southern California, Los Angeles, says:

> . . . I feel very strongly on the point that some systematic teaching should be given in the medical college in regard to the use of Hydrotherapy, and in regard to Dietetics. I do not feel so sure about the question of Medical Gymnastics and Massage. While I think that a more thorough knowledge of these subjects would be beneficial, it does not seem so imperative as a more thorough knowledge of Hydrotherapy and Dietetics. Though I presume that a thorough knowledge of gymnastic manipulations and massage would drive osteopathy out of the field.

Dr. E. O. Sisson, Dean of the College of Physicians and Surgeons, Keokuk, Iowa, writes:

> I hasten to give affirmative answers to the questions you have propounded, for I believe you have struck the keynote, and that the introduction of such teaching will mark an epoch in medical science.
>
> The only school that I know of that carries out practical instruction in Dietetics is the Medical Department of the Minnesota State University, and the professor of that department told me that it was not compulsory there. They have a very complete laboratory, fitted with gas ranges, and the necessary cooking appliances, and each student prepares his own dishes.
>
> Medical Gymnastics, as you say, would not burden the student, but would rather be a physical benefit, and a mental rest.
>
> Hydrotherapy, although taught to a greater or less extent in most schools, it is very seldom that a practical demonstration is given of it.
>
> I heartily agree with your statement that "a practical and scientific knowledge of these three branches would put a check upon quackery and ignorance."
>
> We are dealing with subjects here, the value of which thinking people must realize sooner or later, and the physician by an intelligent practice of such will do a great deal towards doing away with the superstition and mystery with which the charlatan has always loved to surround the practice of medicine.
>
> In my lectures on Hygiene to the medical students, I try to impress upon them the value of these subjects, but as my work is necessarily all didactic I fear they fail to take the interest that they should, and therefore they do not realize the importance of the subjects. In my lectures to the nurses, where there is more opportunity for practical demonstration, I believe that more is gained.
>
> I certainly wish you success in your investigation, and hope that your work will be productive of much good.

Dr. S. W. Williston, Dean of the School of Medicine, University of Kansas, says:

> I believe that all these subjects should find a place in medical instruction, and, of course, wherever taught, they should be, so far as possible, taught by the laboratory method, that is, by actual doing or seeing done.

Dr. Alfred C. Wood, of the University of Pennsylvania, Philadelphia, writes:

> Of course, I appreciate the difficulty of having hours set apart for these subjects in a curriculum already so full; at the same time, in my opinion the necessary readjustment should be made to admit these subjects.

Besides reports from the medical schools the writer has received similar complete reports from many of the editors of our medical journals, and also from the president and other officers of the state medical societies, offering their views and comments as to the importance of more practical instruction in these subjects.

Lack of space prevents the publication of these reports here.

In order intelligently to approach the question we are considering, and that practical suggestions of value may be made, it will be well to review what consideration is generally being given to hydrotherapy, dietetics and physico-mechanical therapeutics, and how they are being taught.

From the replies we have received, it would seem that small part of the attention due these subjects is being paid them. The physiology of dietetics is usually embodied as a part of the lectures under the chair of physiology in the first year of the student's course. In the majority of the colleges the subject is not made plain by any means of actual demonstration; while the therapeutics of dietetics is taught, only incidentally, in connection with the subject of general medicine, usually in the fourth year. The student graduates, with superficial instruction in, or practically ignorant of, the application of dietetics in health or disease. A large number—nay, the larger number of the graduates of our schools—afford examples of the deficiency of knowledge of the composition of foods, the chemical changes taking place in cooking, the digestibility and the absorbability of the various forms of nutriment. And from this it also follows that there is a woeful lack of the understanding of the therapeutics of dietetics, which latter involves the practical application of the facts and laws of this subject in the treatment of different diseases.

The very important subject of hydrotherapy, which comprises the application of water internally and externally, from solid to fluid and vapor—from ice to steam—depending for the result upon the judicious adaptation of its mechanical and thermal influences, is being neglected also. This branch of therapeutics it is customary to teach from the chair of general therapeutics; in most cases, merely by didactic methods. As a result.

the student has neither a definite knowledge of the physiologic action of water, which can only be gained by practical experience, nor the understanding of its intelligent application in diseased conditions. The effect of heat in all its variations of temperature, with such a wide range of therapeutic uses, is of both scientific and clinical importance.

Physico-mechanical therapeutics, which embraces medical gymnastics and massage, with some forms of the application of electricity, is not less important than the other two subjects, and what may be said in regard to the lack of proper training and instruction in these two may apply to the other.

Practical dietetics can not be universally introduced without the free use of hospitals equipped with dietetic kitchens; but in schools where such hospital facilities are at hand, a section of the class could take its turn under a competent instructor, certain hours in the day, during the week, in acquiring the accurate knowledge of the preparation of foods and their proper administration in the cases being treated in the institution. The effects could then be readily appreciated by actual demonstration; and thus another and most important element would be added to the skill of the future practitioner.

No objection, however, can be urged against the illustrative method of teaching hydrotherapy and physico-mechanical therapeutics. Every school is equipped with college dispensaries. All that is needed is to arrange a room, or suite of rooms, equipped with the necessary appliances for the application of water in various forms, and with the different mechanical apparatus to be used. These arrangements may be as elaborate or simple as the school can afford. A separate, or adjoining room may be equipped for placing the patient where he may obtain the benefits of the various forms of physico-mechanical therapeutics. In the customary division of students into sections, for the different dispensary classes, a certain number can readily be allotted to each of the rooms above mentioned, just as they are assigned now to the rooms for instruction in surgery, gynecology, nervous diseases, general medicine, dermatology, etc. The clinical material may come direct, or may be referred from the other departments of the institution. Students will gain more exact knowledge by being called upon to assist the instructor in his daily work; and more patients can be treated when the students are turned into assistants—which is a double gain. This method would not trespass on the time allotted to other work, or unduly press upon the strength of the student; and therefore it would appear to be perfectly feasible. As the value and practicability of the subjects we have been considering become further recognized by the faculties of our medical schools, special elective courses may be established, under trained instructors, in order to give the student theoretical and practical teaching combined. The writer has found in his own experience in teaching that these practical methods are easier for the student. They give him an opportunity to learn more accurately by actual observation and experience, associating the clinical importance of the case with the therapeutic measures used.

It will thus be seen that such observation and experience will help the student to comprehend the pathologic condition of the patient—whether a medical or surgical case, and he is better enabled to grasp the clinical and scientific phenomena presented to his mind. The significance of medical teaching will become real, better understood and more easily remembered. The accumulated facts obtained from didactic teaching will also thus be better utilized, and the mind stimulated for further investigation and study.

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THE SEMINAR METHOD IN MEDICAL TEACHING.

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The present is a time of great change in methods, as well as in the principles of pedagogy in our medical schools. The extent of medical science is so great that no individual can expect to be master of the whole field. The duration of the course preparatory to the practice of medicine is now long enough, and the preliminary education is now thorough enough to allow the best methods of study to be used. For a certain part of the medical curriculum there is no plan of teaching which promises so much as the seminar.

In previous publications[1] I have called attention to my own efforts in this direction. It is my purpose here to make another plea for the more general adoption of the seminar, in teaching almost any topic of interest to the student.

In order that we may understand each other, let me say that the seminar is a method in which each member of the class does independent laboratory, clinical or library work on a subtopic of general interest to the class as a whole, this subtopic chosen by the student or assigned by the teacher. The seminar is a meeting of the students and the teacher to hear, question, criticise and discuss the work of individuals. When the seminar meets for the first time the teacher presents the general subject in the form of a lecture, in the course of which the whole topic is outlined and interesting questions are put forward. From these questions and the outline, and from a knowledge of the individual members of the class, the assignments of subtopics are made. A student takes his assignment and studies up the question, and at the next or some subsequent meeting of the seminar, he presents to the class in such a manner as the case requires, the results of his study. This time it may be an analysis and blackboard talk, the next time a carefully-written abstract, then again a microscopic demonstration and written paper, or later and more complete than any of these, a finished thesis. During the presentation the student who has the floor is in the position of the teacher. The teacher for the moment becomes one of the students. At any moment during the presentation questions may be asked or explanation required. At the end criticsms are to be expected. Such exercises, like laboratory investigation, are time-consuming. The student should have not less than one-half his daily study time for a seminar of two hours a week. The seminar class should not exceed 20 students, selected by their interest in a topic or in the teacher. The management of larger classes is limited to unusual teachers and special topics and methods of procedure. In a very limited field I have used the seminar with a class of 150 students.

The seminar presupposes an elective course. In no other way can the student have time for the exhaustive study of a limited number of subjects. The student will, however, be bound to learn in the course of this study most of the general information which lectures and text-book study is intended to teach. The seminar requires an open library of current and standard medical literature and an ability on the part of the student to make economical use of it. The library must be open during all reasonable study hours, e. g., from 8 a. m. to 10 p. m., and it must be thoroughly catalogued even down to the monographs and important articles in the serials. It will often, in the course of a study, be necessary to get material from the Surgeon General's Library and even to make purchases, and provision should be made for these contingencies so that there will be no paralyzing delay. The laboratories, museums, collections, clinics and other equipment of the college must be at ready and unobstructed, even helpful, disposal of the student. If the student has for his topic the appearance of fat necrosis in gallstone disease, he may require not only the literature from the library, specimens from the museum and laboratory, but he may need to undertake considerable correspondence with pathologists and surgeons, and even wait for autopsies or operation specimens.

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[1] Holmes, Bayard: "The Seminary Method in Teaching Surgery." The Journal A. M. A., Aug. 8, 1896, *et seq.*

The seminar is certainly a poor method at the beginning for the bottle-fed incompetents of our compulsory, graded medical course, but many of them even grow and thrive under the exercise and liberty of the seminar and in moments of forgetfulness manifest the ardor of enthusiasm. But there are always some in every class who bear with difficulty the straitjacket of a required course and the lockstep of class instruction, and these erratic men are the delight of the seminar. They plunge with fervor into their subject and devour the literature. They seek on the cadaver or at the operation table the positive anatomical knowledge which their topic requires. They leave no stone unturned which promises the least elucidation of the subject, and they present the results of their study to the class in a convincing argument and with a persuasive enthusiasm.

There are, of course, certain conditions which the student must meet. He must have a motive for study based for the most part upon a considerable amount of bedside experience. Unless the student is actually in the position of the physician with the immediate obligation to cure the patient safely, quickly and pleasantly, he does not possess the strongest, truest and surest motive for study. When this motive is lacking it can often be supplied by giving the student the necessary patient, or by taking such a topic as the student has already met in his practice. When all other means fail, the student's own ailments or deformities may secure the necessary interest.

The student must also have such a preliminary literary training as will make his routine work perfect in form and availability. It is necessary sometimes to secure at the beginning a chirography suitable to such accurate and manageable work as this form of study demands. Every page must be written as perfectly as if for the printer. The slipshod penmanship which the ordinary note-taking in our medical schools begets, entirely precludes the idea of good work. The student must, from the first, do all his work neatly, in an orderly manner and completely, so that it may never require revision or correction. It is only by writing a library hand or something approaching it that good literary work of such a technical character as medicine requires can be satisfactorily done.

The student must know how to use the library. Only a rare librarian can put students in the way of using the library independently. The shelves as well as the catalogue should be accessible to students. The stacks should be in alcoves, with tables and writing material handy, so that the student, after his ability to find them and replace them has been established, can easily consult many books without troubling the librarian. The same may be said of the laboratory and museum. In order that the student may master his subject completely he must be able, if the subject requires it, to study the anatomy of the part concerned in a thoroughly equipped anatomic laboratory, in the pathologic laboratory and in the autopsy room. In fact, the seminar method of study presupposes for its fullest utilization a complete co-ordination and co-operation of all the resources of the medical school. Through its best and freest use the student becomes an investigator of the topic in his hand, of the literature of the various aspects of his subject, and incidentally of the history of medicine itself. The student is put or puts himself in the position which he will occupy after he leaves the school when he attempts to study any medical topic suggested by the requirements of his practice.

Last of all, through the seminar, the medical teacher may secure for the profession the careful literary and experimental study of a large and growing number of subjects which he can never have time to follow out by himself, and he may be instrumental in bringing these subjects before the profession through his students' theses. A considerable number of the most valuable contributions to medical literature comes to us now through the theses of applicants for the doctor's degree in foreign universities. The American students are not less talented or diligent. Our teachers are not less devoted. The continuous course which many medical schools are adopting promises that the end of the course shall be punctuated by the return to the discarded thesis. To make the thesis possible or valuable a considerable portion of the curriculum must be conducted on the seminar plan, whether it is called by that name or not.

MEDICAL EDUCATION.*

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The writer, after considering the several phases of the subject of medical education, registration, etc., as they apply in Canada, said:

PROFESSIONAL EDUCATION.

The medical curriculum has subjects difficult to acquire, worthless as mental gymnastics, useless in practice and speedily forgotten when acquired. The methods of teaching are imperfect and vicious. The student in didactic lectures is not taught—he is over-lectured and under-taught. The lecturer describes rather than demonstrates and instead of making the student follow him step by step in his methods of observation, collecting, comparing, testing, and recording facts and of reasoning thereon, the didactic lecturer leaves them to be learned by being described, forgetful that they can be learned only by being practiced.

The main tendency of the present method of didactic lectures is to give students smatterings of scientific knowledge at the cost of that thorough knowledge of their art which is essential to its successful exercise. In the curriculum there is overlapping of similar subjects in the didactic and clinical courses. The course of didactic lectures should be entirely abolished or radically modified. Teaching should be bedside work, oral and written examinations with comments by the teacher. In analyzing the didactic course, I would like to direct the attention of the Association to several defects and useless waste of time which could be more profitably employed.

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* Abstract of the Address in Medicine, delivered before the Canadian Medical Association, Winnipeg, August 28.

What use is there for a didactic lecture on descriptive anatomy; a subject which can only be mastered in the dissecting room. Professor McAllister, of Cambridge, states that anatomy being a practical subject can be learned only in the dissecting room. The line of demarcation between descriptive and practical anatomy is arbitrary and fanciful. In a large class in descriptive anatomy, the favored few near the lecturer and the dissected part derive some instruction, but to all the rest the hour is useless and wasted. Persistent work in the dissecting room under the guidance of an experienced demonstrator who will describe, discuss and constantly orally examine the student is the rational and effective method of teaching anatomy.

Another useless subject is Medical Jurisprudence; the interest in it ends after the examination and to the general practitioner the knowledge thus gained is of no practical value. Few men are called upon to give evidence in criminal cases, and when they are the knowledge acquired while at college is either useless, fragmentary or forgotten, and in order to cut a respectable figure in court, we frantically read up Taylor and Reese. All knowledge is useful, but that derived from Medical Jurisprudence is about as practical to the general practitioner as the geography of Timbuctoo or the philosophy of Confucius. The object of medical teaching is to turn out good practitioners.

Another subject as at present taught which is a weariness to the flesh is Sanitary Science. Its pretensions are stupendous; it is supposed to teach everything—land surveying, architecture, organic chemistry, agriculture, plumbing, drainage and civil engineering. The student is crammed with this conglomerate stuff, which he must intelligently reproduce at the annual examination. In Sanitary Science we have a splendid exemplification of the "cram" system and the utter uselessness of the knowledge, the very essence of smattering. . . .

The burden of the medical student of to-day is very great. More attendance at lectures are demanded, more subjects are being wedged into the curriculum. That a conglomerate heap labeled "Materia Medica" might be treated in a bag and baggage fashion. It is impossible to encompass this large mass of dry technical knowledge in the student's course. Materia medica is a mere tax to the memory—the acquisition largely of bare facts being necessary and facts that are neither retained nor applied. Mr. Huxley's views in an address to the students of St. Mary's Hospital are appropriate. He says: "I am quite prepared to admit, and, indeed, I have always had a strong conviction that there is something absolutely preposterous in the volume and bulk to which some of our treatises on materia medica extend, and the enormous quantity of irrelevant matter with which their pages are crammed." What scraps of information can a didactic lecturer impart to his students which they can not readily find in the text-books! An occasional quiz class with specimens of drugs and their preparation should take the place of the systematic lecture; in fact, let pharmacy and therapeutics take its place. . . .

The system of imparting instruction by lectures is a mediæval custom originating when text-books were few, costly and inaccurate. It is a purely traditional system. Now that there are text-books in abundance covering the whole range, and of excellent merit, these lectures should be modified. The chief value of lectures is that the student is obliged to hear a certain quantity of a subject every day whether he likes it or not, while no authority can compel him to work at a text-book except by moral suasion or arguments of a practical character addressed to his self-interest. A restricted number of lectures may be advisable, but the number could be abbreviated with advantage, and confined to the inculcation of principles; removing difficulties and obstacles from the student's path; explaining types and divergencies of disease; giving information not within the pages of a text-book. The time hitherto employed in systematic lectures might be devoted to class examination on previously announced subjects in which the teacher should indulge in questions, explanations, corrections and comments. This is the true education—a drawing-out instead of a pouring-in process. The lecture system reminds one of the daughters of Danaus, whose destiny was to fill pitchers which could hold no water; the students are percolated receptacles of transitory knowledge. . . .

The "Case" method advocated by Mr. Cannon, of Harvard University, in March, 1900, has received the indorsation of many teachers in England and the United States. This method is supposed to supplant the dreary old-fashioned didactic lecture, and is an imitation of the plan adopted in the law department of Harvard. The plan is to secure printed histories of actual cases which perhaps the student may have seen in the hospital. Each student is previously supplied with a printed copy of the history for careful perusal sometime prior to the discussion. The class and teacher meet and discuss the diagnosis, pathology, symptoms and treatment. Text-books and other literature are consulted, and the case is thoroughly thrashed out. The student is learning the judgment of clinical data, the estimation and relative value of the various symptoms, distinguishing between the important and the unimportant, the common features and the more unique. He not only receives but acquires knowledge. The Case method may supplant or supplement the didactic and clinical courses. This plan is no experiment for it has been on successful trial by several professors at Harvard, by Dr. J. White, of Philadelphia, and Dr. R. E. Riggs, of the University of Minnesota. Possibly I may be prejudiced, but from personal experience I favor the English system of clinical clerkships and dressersships as the most feasible, practical and thorough for the development of medical teaching. It embraces all the advantages claimed by the advocates of the "Case System" and the sectional plan. Moreover, the student is brought into direct contact with the patient for whose history he is responsible. By this method the medical student is trained to habits of minute, careful methodized observation and registration of the phenomena of disease. The student observes his cases from the incipient stage to either recovery or the postmortem room, to the verification or otherwise of his daily recorded observations. Upon this solid foundation of actual personal experience, he builds to fit himself for life's battle.

Malarial Cases Must Be Reported.—Private physicians, public institutions, hospitals and asylums of New York City, are required to report all cases of malarial fever that come under their observation to the Board of Health. At a recent meeting of the board the following resolutions were adopted: Whereas, Recent investigations have shown that malarial fever is an infectious disease and can be largely prevented by the adoption of simple precautions, and Whereas, It is the desire of the Department of Health to prevent the extension of malarial fever, which now exists in some of the boroughs, to the other boroughs, and to restrict its prevalence in those boroughs where it already exists; Resolved, That all public institutions, hospitals, homes, asylums, etc., be required to report all cases of malarial fever which come under their observation, giving the name, age, sex, occupation and present address of the patient, and also information as to whether the attack is a primary infection or a relapse, and the address where the disease was probably contracted. Resolved, That all physicians in the city of New York be requested to furnish similar information in regard to patients suffering from malarial fever under their care. Resolved, That the circulars of information of the Department of Health regarding the causation and prevention of malarial fever be mailed to the addresses in which malarial infection has apparently been contracted, and also to the addresses from which the cases are reported, when these are different. Resolved, That postal cards for furnishing the required data be prepared and forwarded to institutions and physicians for reporting the cases of malarial fever which come under their observation, as is done in other infectious diseases.

MEDICAL SCHOOLS IN THE UNITED STATES.

Below is given a brief description of every college in the United States that is legally chartered to confer the M. D. degree and whose diploma is recognized by at least one state licensing board. The list includes the sectarian as well as the regular colleges, as their graduates are physicians in the eyes of the law. The order in which the colleges are placed is according to date of organization; grouped in cities. The information given is obtained, as a rule, from the catalogues.

ALABAMA.

Alabama, population 1,828,697, has two medical colleges, the Medical College of Alabama and the Birmingham Medical College.

Mobile.

Medical College of Alabama.—This is the medical department of the University of Alabama, and was organized in 1859. It is located in Mobile, a city of 38,469 inhabitants. The City Hospital, under the management of the Sisters of Charity, furnishes free clinical material. The faculty consists of 9 professors and 17 lecturers, 26 in all. It is well equipped with buildings, laboratories, dispensary, etc. Its requirements for admission are those of the Southern Medical College Association. The course of study is graded and covers four years of six months each, but students entering on medical college work prior to the session beginning in 1899 may be graduated in three years. The total fees for each of the first three years is $100; for the fourth year, $125. Board and lodging, $3.50 to $5 per week. The Dean is Dr. George E. Ketchum, Mobile, Ala. Total registration, 1900-1901, 130; number of graduates, 38. The thirty-sixth session will begin on Oct. 8, 1901, and will close April, 1902.

Birmingham.

Birmingham Medical College.—This school was incorporated in 1894 and is situated in Birmingham, a manufacturing town of 38,415. The clinical advantages are good. The Hillman, St. Vincent's, Pratt and County hospitals are accessible to the students. The clinical, histological and pathological laboratories are well equipped. There are 12 professors and 8 lecturers; total teachers, 20. The requirements for admission are those of the Southern College Medical Association. The course of instruction is a graded one and embraces four separate sessions of six months each. Those commencing prior to January, 1899, can graduate after three years. The fees are $75 for each of the first three years and $105 for the fourth. Good board can be obtained at from $12 to $20 per month. The Dean is Dr. B. L. Wyman, 212½ N. 20th St., Birmingham. Number of students registered last session, 77; number of graduates, 15. Next session opens Oct. 2, 1901, and closes April 1, 1902.

ARKANSAS.

Arkansas, population 1,311,564, has one medical college.

Medical Department of the Arkansas University.—This college is located at Little Rock, which has a population of 38,307. It was organized twenty-two years ago as the Arkansas Industrial University Medical Department. It belongs to the Association of American Medical Colleges, having become a member of the Association at its organization, and the requirements for admission are those of that Association. Hospital facilities are furnished by "Logan H. Roots Memorial Hospital," St. Vincent's Infirmary, and Pulaski County Hospital, the latter having a capacity of 200 beds. The teaching body consists of 21, Dr. F. L. French, Little Rock, being Secretary of the faculty. The fees are: Matriculation $5, paid but once; annual fees $58, and graduation $25. Board and lodging costs from $13 to $18 per month. Total number of students at last session, 240; graduates, 20. The next course of lectures begins Oct. 4, 1901, and ends April 11, 1902.

CALIFORNIA.

California, population 1,485,053, has six medical colleges. Five are located in San Francisco, a city of 342,782 inhabitants. They are Cooper Medical College, Medical Department of the University of California, California Medical College, Hahnemann Hospital College, and the College of Physicians and Surgeons. The clinical facilities of San Francisco are good, and board and lodging can be obtained for from $20 to $30 a month. The other, the College of Medicine of the University of Southern California, is situated in Los Angeles, population 102,478. Board and lodging can be obtained in that city for $4 a week and upwards.

San Francisco.

Cooper Medical College.—This school was organized in 1858, though its present name was not adopted until 1882. The faculty consists of 17 professors, and 13 lecturers, demonstrators, etc., 30 in all. Lane Hospital, adjoining the college; the City and County Hospital, containing 464 beds, and the college dispensary furnish clinical material. The requirements for admission are that the applicant must show by certificate or examination sufficient knowledge of English grammar and composition, United States history, geography, arithmetic, elementary physics, Latin grammar and translation, and some knowledge of another modern language or science. After August 15, 1902, the requirements will be raised to equal those of admission to the State University. The college building supplies good laboratory and lecture-room facilities. The curriculum covers a graded course of four years of eight months each. Fees: First year, $115; second, $110; third, $100, and $125 for the fourth year. The Dean is Dr. Henry Gibbons, Jr., 920 Polk St., San Francisco. Total registration for 1900-1 was 167; graduates, 27. The present session opened August 15, 1901, and will close April 29, 1902.

Medical Department University of California.—This department of the State University was organized in 1872, and has a faculty composed of 17 professors, 9 associates and lecturers, 14 instructors and assistants, a total of 40. The City and County Hospital, which admits students of this school not only to the clinics proper, but also to its wards for study, and the college dispensary furnish good clinical material. The senior class is divided into sections of six students each and bedside instruction is given them five days a week. Practical laboratory examinations are required of the students in the laboratories of the hospital, and practical obstetrical demonstrations are given at the bedside. The building is commodious and furnishes good laboratory and lecture-room space. The course covers graded work for four years of eight months each. This school is a member of the Association of American Medical Colleges, and the requirements for admission are those prescribed by that organization. The total fees for the first year are $115; second, $110; third, $100, and $125 for the fourth year. The Dean is Dr. Arnold A. D'Ancona, San Francisco. Total registration for 1900-1 was 164; graduates, 28. The thirtieth session opened August 15, 1901, and will close May 15, 1902.

California Medical College.—Eclectic. This school was organized in 1878. Its faculty includes 14 professors, 8 lecturers and 6 instructors, a total of 28. The clinical material is supplied by the Maclean Hospital. Applicants for admission not holding diploma or certificate are examined. The course has been extended to cover four years of eight months each. Total fees are about $110 for each of the first three years and $40 for the fourth year. The Dean is Dr. D. Maclean, San Francisco. Total registration for 1900-1 was 49; graduates, 10. The next session opens October 7, 1901, and closes May 21, 1902.

Hahnemann Hospital College.—Homeopathic. This was organized in 1884, and has a faculty of 20 professors, and 18 lecturers, instructors, etc., in all 28. The Pacific Homeopathic Polyclinic, the Homeopathic Sanatorium and the San Francisco Nursery for Homeless Children and Marie Kip Orphanage, accommodating respectively 75 children and 120 girls; Fabiola Hospital, and the City and County Hospital furnish clinical material for study. Matriculants must possess a knowledge of English composition, arithmetic, geography, history and Latin, as evidenced by certificate or examination; however, one year after entrance is permitted in which the student may prepare himself. The course includes four years of seven months each. Total fees for the first year, $160, and $75 for each of the other three years. The Dean is Dr. James W. Ward, 606 Sutter St., San Francisco. Total registration for 1900-1 was 40; graduates, 6. The nineteenth session opened May 16, and will close December 12, 1901.

College of Physicians and Surgeons.—This school was organized in 1896, and has a faculty of 10 professors and 26 associates, lecturers, etc., 36 in all. The City and County Hospital, 32 beds of which are available to students of this school for bedside instruction; St. Winifred's Hospital, with 100 beds; City Receiving Hospital, and a sanatorium at San Mateo supply material for clinical instruction. Applicants for matriculation must show an equal amount of work done or pass a satisfactory examination in English, history and government, geography, physics, mathematics and Latin grammar and translation. The college building, recently completed, is large and well supplied with laboratories and lecture rooms. The curriculum embraces four years of six months each. Fees: First year, $90; second, $85; third, $75, and $100 for the fourth year. The Dean is Dr. D. A. Hodgehead, San Francisco. Total registration for 1900-1 was 171; graduates, 38. The next session opens January 2, 1902, and closes June, 1902.

Los Angeles.

College of Medicine, University of Southern California.—This school was organized in 1885, and has a faculty of 21 professors and 10 instructors, etc., 31 in all. The County Hospital, having 200 beds, and a college dispensary furnish clinical material. Applicants for admission are required to pass an examination in English, arithmetic, elementary algebra, physics and Latin equal to one year's work, unless they can show by certificate that they have covered that ground. The building is amply provided with laboratories and lecture rooms. A graded course, covering four years of twenty-six weeks each, is offered. The total fees for the first year are $145; second and third, $130 each, and $40 for the fourth year. The Dean is Dr. H. G. Brainerd, 315 W. Sixth St., Los Angeles. Total registration for 1900-1 was 87; graduates 19. The next session opens October 25, 1901, and closes June, 1902.

COLORADO.

Colorado, with a population of 539,700, has four medical colleges. Three of these are in Denver, which has a population of 133,859: Denver College of Medicine, Gross Medical College and Denver Homeopathic College; the other, the Colorado School of Medicine, is at Boulder. The clinical facilities in Denver available to the three colleges are the Arapahoe County Hospital, which has a capacity of 225 beds; St. Joseph's Hospital, with 200 beds, and St. Luke's Hospital, with 75 beds. The Public Library contains 10,000 volumes on medicine. Board can be obtained in Denver for $5 a week and upwards.

Denver.

Denver College of Medicine.—This is the medical department of the University of Denver, and was organized in 1880. Besides the clinical advantages offered in the above hospitals, the State Home for Dependent Children and the City Contagious Hospital are open to its students. The faculty is made up of 35 professors and 11 lecturers, 46 in all. Its location is central and the buildings are well arranged for laboratory, dispensary and didactic work. The course is graded and covers four years of eight months each. This college is a member of the Association of American Medical Colleges and its requirements for admission are governed by the rules of that Association. Final examinations at the end of each year are held. The fees for the first year are $90; for the next two, $86, and for the fourth year, $101. Dr. Henry Sewall, 23 Eighteenth Ave., is Secretary. Total registration 1900-1, 60; number of graduates, 20. The twenty-first session began Sept. 6, 1901, and will close May, 1902.

Gross Medical College.—This is the medical department of the Rocky Mountain University, and was organized when that institution was founded in 1887. Situated in Denver, the clinical facilities are good, and besides the hospitals used in common by all, St. Anthony's Hospital and the National Jewish Hospital for Consumptives are claimed for its students alone for clinical material. The faculty consists of 28 professors and 16 lecturers, 44 in all. Its buildings are well adapted for didactic, clinical and laboratory teaching. Its requirements for admission are those laid down by the Association of American Medical Colleges, of which this college is a member. The course of study covers a four-year graded course, eight months constituting a year. The total fees for the first two years are $100 each; for the third, $90, and for the fourth year, $75, except to students who matriculated prior to the session of 1900-1 and who have attended their four years at this college, in which case the fourth-year fees are $85. The Secretary is Dr. Robert Levy, California Bldg., Denver. The total registration for 1900-1 was 78; number of graduates, 15. The fifteenth session began Sept. 11, 1901, and will close May, 1902.

Denver Homeopathic College.—This college was organized in 1894. Besides the Arapahoe County Hospital, exclusive privileges for clinical work in the Denver Homeopathic Hospital, the Haven and the Belle Lenox Nursery are claimed for its students. The faculty is made up of 19 professors, and 12 lecturers and instructors, 31 in all. The requirements for admission are, "possession of a diploma from a literary college, university, an academy, a normal or high school; a first grade teacher's certificate, or a previous matriculation at some reputable literary or medical college." The course of study consists of four years of seven months each; monthly examinations are held in each subject. A five-year scholarship may be had for $300, payable in advance, otherwise the tuition is $100 a year; there is a matriculation fee of $5, payable once. The Dean is Dr. James P. Willard, Masonic Temple, Denver. Total registration for 1900-1 was 41; the number of graduates, 5. The eighth session began Sept. 18, 1901, and will close April, 1902.

Boulder.

Colorado School of Medicine.—This is the Medical Department of the University of Colorado, and was opened in 1883. It it situated in Boulder, a town of 6150 inhabitants. The University Hospital, under the control of the state, is equipped to accommodate 40 patients and furnishes free clinical material. Both hospital and dispensary clinics are offered and the sanatorium located in Boulder offers additional advantages in this line. The faculty embraces 15 professors and 10 lecturers and assistants, a total of 25. The laboratories are well equipped and commodious. A separate building is devoted to the study of anatomy and another one is used for medical work exclusively. A complete four-year course of study in a recognized high school, or its equivalent, is required for admission. This school is a member of the Association of American Medical Colleges. The work embraces a graded course of four years of nine months each. The tuition is $50 per year; there are no other fees. The Dean is Dr. Luman M. Griffin, Boulder. Total registration for 1900-1 was 70; graduates, 9. The twentieth session began Sept 9, 1901, and closes June 7, 1902.

CONNECTICUT.

Connecticut has a population of 908,420, and contains one medical college:

Yale Medical School.—This is the department of medicine of Yale University, and is located in New Haven, a good railroad and manufacturing town of 108,027 people. In 1810 a charter was granted for the establishment of this school, and in 1813 it was organized as The Medical Institution of Yale College. In 1879 a new charter changed the name to the one now used, and in 1884 the Connecticut Medical Society, which from the granting of the first charter had taken an active part in its control, released itself from a further responsibility and the University authorities assumed full control. The clinical advantages are embraced under the New Haven Hospital, which contains 150 beds and is the general hospital for New Haven; the Springside Hospital, which is connected with the city almshouse, and the State Hospital for the Insane, which, with its 1800 patients, offers an opportunity for special instruction in insanity in addition to the clinics. Besides these, the New Haven Dispensary, having a staff of 30 physicians, offers material for clinical teaching. The faculty embraces 11 professors, 4 lecturers, 12 instructors, and 16 assistants, a total of 43. The lecture rooms and [illegible] well equipped. Matriculants are admitted [illegible] ded that they have received a degree in A[illegible] present certificates showing that they h[illegible] the subjects of the examination at some college, high school, academy, or preparatory school approved by the faculty, or that they have passed matriculation examinations, equivalent to those required, at some approved professional school. This school is a member of the Association of American Medical Colleges. The course covers a four-year graded curriculum, eight months constituting a school year; the first two years the fundamental branches are studied, the third year is devoted to a systematic teaching of medicine, surgery, obstetrics and pharmacology, and in the fourth year clinical work, with medicine, surgery and the specialties, is presented. The fees are $150 for each of the first three years, and $130 for the fourth year; in the first year there are additional fees amounting to $18, and in the second, $8. Board and lodging in New Haven can be obtained for $4.50 and upwards. The Dean is Dr. Herbert E. Smith, New Haven. During the session of 1900-1 there were 133 matriculants and 18 graduates. The eighty-eighth session opens October 4, 1901, and closes June 26, 1902.

DISTRICT OF COLUMBIA.

Washington, population 278,718, offers to the student of medicine many advantages. The Army Medical Museum, the Museum of Hygiene, the National Museum, together with the libraries in the Surgeon-General's Office, the Toner Medical Library and the Museum of Hygiene, in all over 125,000 volumes upon medicine, opens to the medical student a most profitable field. The clinical advantages offered by the various hospitals are good. Owing to the many boarding houses and hotels, board and lodging can be had at extremely reasonable rates. The medical schools are four, and are as follows:

Medical School of Columbian University.—This school was organized in 1821 as the Medical Department of Columbian College, which in 1873 became Columbian University. Besides University Hospital, under the immediate control of the faculty and giving the students of this school exclusive clinical advantages, the Garfield Hospital, the Children's Hospital, Central Dispensary and Emergency Hospital, the Providence Hospital, the Lutheran Eye and Ear Infirmary, the Episcopal, Columbia and the St. Elizabeth's Hospitals, all permit of abundant opportunity for clinics and clinical material. The faculty is composed of 29 professors, and 23 demonstrators and assistants, 52 in all. The candidates for matriculation are required to conform to the regulations of the Association of American Medical Colleges, of which this school is a member. The equipment and facilities for laboratory, didactic and clinical work are good. The completion of graded work covering the period of four years, eight months to the school year, is required; semi-annual examinations are held. Total fees for each year are $110. The Dean is Dr. E. A. de Schweinitz, 1325 H St. N. W., Washington. For the school year 1900-1 the total registration was 249; the graduates were 26. The eightieth session begins Oct. 7, 1901, and closes May 19, 1902.

Georgetown University School of Medicine.—This is the medical department of Georgetown University and was organized in 1850. The Georgetown University Hospital is under the control of the School of Medicine and affords excellent facilities for clinical teaching and ward classes. Clinics are also held for the benefit of the students in Providence Hospital, containing 300 beds; in the Children's Hospital, the Central Dispensary and Emergency Hospital and the Garfield Hospital. Attendance upon clinical instruction is obligatory in the third and fourth years. The faculty contains 27 professors, and 22 instructors and assistants, a total of 49. The requirements for admission are those of the Association of American Medical Colleges, of which this school is a member. The building is conveniently located, and contains spacious and well-ventilated lecture rooms, laboratories and library; the laboratories are equipped with the most approved instruments and appliances. The complete course of study extends over four terms of eight months each. Examinations are held at the end of each session. The fees for the first year are $100; for the second, $105, and for the last two years, $100 each; a fee is charged for the material used in practical anatomy and operative surgery. The Dean is Dr. George M. Kober, 1600 T St., Washington. The total registration for the session 1900-1 was 123; graduates, 21. The next term opens Sept. 28, 1901, and ends May 31, 1902.

Howard University Medical Department.—*Colored.* This institution was organized in 1867 and "in conformity with the spirit of the organic law of the University, is open to all, without regard to sex or race, who are qualified by good moral character, proper age and suitable education." The removal of any racial distinction has been taken advantage of by colored students, so that it is devoted to them exclusively. The Freedmen's Hospital and Asylum is a general hospital of 300 beds and permits of the study of clinical cases among their own race. The faculty comprises 15 professors, and 10 lecturers and assistants, 25 in all. Matriculants are held to the requirements for admission prescribed by the Association of American Medical Colleges, to which this college belongs. The teaching has been in the past devoted to night classes, but the faculty announces that "it is probable that for the session of 1902-3 the first-year work will be day work almost altogether." Students are required to attend four courses of lectures in separate years of seven months each. The fees for each session are $80, plus $2 per part for dissecting material. Board can be had at the school dining hall for $9 a month, and a room in the dormitory for $15 a term. The Dean is Dr. Robert Reyburn, 714 13th St. N. W., Washington. Total registration for the year 1900-1 was 142; graduates, 19. The thirty-fourth session begins Oct. 1, 1901, and closes May, 1902.

National University Medical Department.—This school was organized in 1884 and has a faculty made up of 30 professors, 1 assistant and 10 demonstrators, a total of 41. Clinical facilities are obtained at the Providence, Garfield and Episcopal Hospitals, the Eastern and Presbyterian Dispensaries and the Home for Incurables. Candidates for admission are held to the requirements laid down by the Association of American Medical Colleges, of which this school is a member. Instruction is given by lectures, recitations, clinical teaching and practical laboratory work. Oral examinations are held each week and final examinations, both oral and written, at the end of each lecture term. The course consists of graded work for four years of eight months each. The total fees for each year are $100, except the first, when an additional fee of $5 is charged. The Dean is Dr. H. H. Barker, 1116 H St. N. W., Washington. Total registration for 1900-1 was 33; graduates, 11. The eighteenth session will begin Oct. 1, 1901, and will extend to May 3, 1902.

GEORGIA.

Georgia, population 2,216,331, has three medical colleges: Medical College of Georgia, located in Augusta; Atlanta College of Physicians and Surgeons, and Georgia College of Eclectic Medicine and Surgery, both in Atlanta.

Augusta.

Medical College of Georgia.—This school was organized as a medical academy in 1829, and in 1873 was made the medical department of the University of Georgia, which relationship it still holds. It is situated in Augusta, a city of 39,441 inhabitants, and its faculty is made up of 15 professors, and 5 assistants, 20 in all. All students *who entered on their first course after Sept. 30,* 1900, must attend four sessions of six months each, those beginning previous to that time are compelled to take only three years' work, but in order to encourage these to take the additional year no tuition is charged them for the fourth year. Applicants for admission must, by examination, certificate or diploma, show that they possess an education equal to that required for second grade teachers in public schools; if they are deficient on examination, however, they are admitted and they may remove the *condition* any time before they appear for graduation. The City Hospital, with 130 beds; Lamar Hospital, with 80; the Polyclinic, and Hospital for Contagious Diseases supply clinical material. Total fees for first two years are $100 each; third year, $90, and $120 for the last year. Board and lodging can be procured *for from $3 to $5* a week. The Dean is Dr. Eugene Foster, Augusta. Total enrolment for 1900-1 was 107; graduates, 30. The seventieth session opens October 1, 1901, and closes April, 1902.

Atlanta.

Atlanta College of Physicians and Surgeons.—This school was formed in 1898 by the consolidation of the Atlanta Medical College, organized in 1854, with the Southern Medical College, organized in 1879. It is situated in Atlanta, an enterprising manufacturing city with a population of 89,872, and has a faculty composed of 14 professors and an adjunct faculty of 17, a total of 31. Clinical facilities are furnished by the Grady Hospital, which is the *general hospital for Atlanta; clinics are free to the graduating* class. First course students are required to "give satisfactory evidence to the faculty of such educational qualifications as will be deemed necessary for the successful prosecution of their medical studies. These requirements will be similar to those of other reputable medical colleges in the country." The course of study covers four years of six months each and is graded; the coming commencement, April, 1902, will graduate the last three-year students. The buildings are large and a new building for practical anatomy has just been added. Fees: Matriculation, paid once, $5; tuition, each year, $100, and $30 for graduation fee. Board and room can be obtained for from $3 to $4 per week. The Dean is Dr. W. S. Kendrick, 71 Washington St., Atlanta. Total registration of students for 1900-1 was 282; graduates, 67. Next session begins October 2, 1901, and closes April 4, 1902.

Georgia College of Eclectic Medicine and Surgery.—This was organized in 1886, and has a faculty of 11 professors and 1 demonstrator. The college dispensary and Grady Hospital furnish clinical material. Applicants for admission must adhere to the requirements established by the National Confederation of Eclectic Colleges, of which this college is a member. The curriculum covers four years of six months each. The Proctor is Dr. Elzie B. Thomas, Atlanta. Total number of students for 1900-1 was 55; graduates, 21. The next session opens Oct. 2, 1901, and closes April 1, 1902.

ILLINOIS.

Illinois, population 4,821,550, has sixteen medical colleges. They are all located in Chicago, a city with 1,698,575 inhabitants, and are as follows: Rush Medical College, Northwestern University Medical School, Hahnemann Medical College, Bennett College of Eclectic Medicine and Surgery, Woman's Medical School, Chicago Homeopathic Medical College, College of Physicians and Surgeons, Hering Medical College, Jenner Medical College, Harvey Medical College, Illinois Medical College, Dunham Medical College, American Medical Missionary College, College of Medicine and Surgery, National Medical University and Chicago Eclectic College. Room and board can be obtained for from $2.50 a week upwards.

Rush Medical College.—This school was founded in 1837, organized in 1843, was the medical department of Lake Forest University from 1887 to 1898, *and in the latter year became affiliated* with the University of Chicago. The faculty is composed of 24 professors, 31 associate and assistant professors, and 59 instructors, etc., a total of 124. Good clinical facilities are furnished ital, caring for about 20,000 patients yearly; with 250 beds; a college dispensary, and an obstetric department. In *addition to* these, extra-mural clinical *courses are offered* at the West Side Hebrew Dispensary, St. Luke's *Hospital*, Illinois Charitable Eye and Ear Infirmary and *Chicago* Isolation Hospital. Bedside instruction is *given. The requirements* for admission are those of admission to the better universities or colleges. For the sessions of 1902 there will be required *a certificate* of admission to the second academic year of an accredited university, and for 1904-5 *to the third year.* By the addition of a recently completed, seven-story building, the facilities for clinical instructions are largely increased. The laboratories and their equipment are unexcelled. The curriculum covers graded work for four years of three quarters each, a quarter being three months. A continuous session is held, but credit *for more than* three quarters can not be obtained in any calendar year. A combined course for six years confers degrees of both Science and Medicine. All freshmen and sophomore studies are given at the University of Chicago. The total regular fees are $157 this year, but it is designed to gradually increase the fees to $200 per year. However, students in continuous attendance, i. e., three quarters in twelve months, may complete their course by paying the fees in vogue when they first enter the college. A matriculation fee of $5 is paid but once, and there are incidentals amounting to from $2 to $5 annually. The Dean is Dr. Frank Billings, 100 State St., Chicago. Total registration 1900-1 was 1055; graduates, 213. The fiscal year begins July 1; final examinations are held at the end of each quarter for those who have completed their work.

Northwestern University Medical School.—This school was organized in 1859 as the medical department of Lind University, became independent as the Chicago Medical College in 1864, and in 1869 assumed its present relation as medical department of Northwestern University. The faculty comprises 30 professors, 10 associates and assistants, and 46 instructors, demonstrators, etc., in all 86. The *newly completed* Wesley Hospital, with 225 beds; Mercy Hospital, *containing* 400 beds; Provident Hospital, *having* 100 beds, and a college free dispensary furnish opportunities for clinical study to students of this college exclusively. St. Luke's, Cook County, and the Chicago Lying-in Hospitals are also open *to them for study.* Applicants for admission must, by diploma, certificate or examination, show possession of the educational acquirements *required to enter* the College of Liberal Arts of Northwestern University. This school is a member of the Association of American Medical Colleges. The laboratory and lecture-room facilities *are ample* and the equipment is good. The course of study covers graded work for four years of thirty-six weeks each. Final examinations are held at the end of each semester. The fees for each year are $135 and a matriculation fee of $5, paid once, is charged. The Dean is Dr. N. S. Davis, Jr., 65 Randolph St., Chicago. The total registration for 1900-1 was 344; graduates, 74. The next session opens Oct. 1, 1901, and closes June 19, 1902.

Hahnemann Medical College and Hospital.—Homeopathic. This was organized in 1851 and has a faculty of 19 professors and 30 associates, lecturers, etc., 49 in all. Hahnemann Hospital and a college dispensary supply clinical material. The requirements for admission are sufficient knowledge of English, arithmetic, geography, algebra, physics, United States history and Latin. A continuous course is held, in which the year is divided into three terms, two of which make up a school year. Four such years are necessary to cover the curriculum. Fees: Matriculation, paid once, $5; each term, $50, and hospital tickets, $5 each for third and fourth years. The Dean is Dr. E. Stillman Bailey, Marshall Field Bldg., Chicago. Total registration, 1900-1, was 175; graduates 51. The fall term began Sept. 9, 1901.

Bennett College of Eclectic Medicine and Surgery.—Eclectic. This school was organized in 1868, and has a faculty of 25 professors and 4 assistants, 29 in all. Bennett Hospital, Cook County and Baptist Hospitals, and a college dispensary supply clinical facilities. Matriculants must present a diploma or "pass a satisfactory examination in conformity with the minimum requirements of the State Board of Health." The course covers four years of twenty-six weeks each. This school is a member of the National Confederation of Eclectic Medical Colleges. Fees for each year are $100, *with a matriculation* fee, paid once, of $5. The Dean is Dr. A. L. Clark, Elgin, Ill. Total registration, 1900-1, was 124; graduates, 37. The thirty-fourth session begins Sept. 24, 1901, and ends May 13, 1902.

Northwestern University Woman's Medical School.—This school was founded in 1870, and in 1892 became a department of *the Northwestern University.* The faculty is made up of 25 professors and 27 assistants, lecturers, etc., a total of 52. The clinical facilities are furnished by Cook County, Wesley and the Woman's Hospitals, the Illinois Charitable Eye and Ear Infirmary and a college dispensary. The requirements for admission are those of admission to Northwestern University College of Liberal Arts. This school is a member of the Association of American Medical Colleges. There is a continuous session, the year being divided into four terms of three months each; three terms constitute a college year, and at least forty-five months must elapse from matriculation to graduation. The fees are $100 each year, with a matriculation fee of $15 for the first year and a diploma fee of $10. The Dean is Dr. Eliza H. Root, Chicago. Total registration, 1900-1, was 72; graduates, 19. The fall session begins Oct. 1, 1901.

Chicago Homeopathic Medical College.—Homeopathic. This was organized in 1876, and has a faculty of 21 professors and 46 adjuncts, lecturers, etc., a total of 67. The Chicago Homeopathic and *Cook County* Hospitals, together with a college dispensary, furnish clinical material. Applicants for admission must show by certificate or examination a sufficient knowledge of English, arithmetic, algebra, physics, *United States history, geography,* botany, and Latin equivalent to a year's study. The course covers four years of seven months each. Total fees are about $110 for each year. The acting Dean is Dr. A. C. Cowperthwaite, Marshall Field Bldg., Chicago. Total registration, 1900-1, was 152; graduates, 48. The next session opens Sept. 24, 1901, and ends *April 22, 1902.*

College of Physicians and Surgeons.—This school was organized in 1882 and in 1896 became the medical department of the University of Illinois. The faculty is composed of 39 professors, 38 adjuncts and clinical professors and 38 instructors, etc., a total of 115. The West Side Hospital, containing 125 beds; Cook County Hospital, and a college dispensary and materniay clinic supply most of the clinical material, but under certain conditions students of this school are admitted to the *following hospitals for clinical study:* Augustana, Baptist, Chicago, Woman's, Samaritan and Alexian Brothers' Hospitals, and the Illinois Eye and Ear Infirmary. Applicants for admission must conform *to the requirements* prescribed by the Association of American Medical Colleges, of which this school is a member. A magnificent building has recently been added to the college, and the laboratory, amphitheater and lecture-room space and equipment is good. *A continuous session* is held and the calendar year is divided into three terms of sixteen weeks each. Two terms constitute a collegiate year and credit for more than that amount of work can not be obtained in any calendar year, except with the permission of the Dean. Four collegiate years are necessary *for graduation*. The fees are $130 each for the first two years, $115 for the third, and $125 for the fourth year. The Dean is Dr. William E. Quine, 103 State St., Chicago. Total registration for 1900-1 was 676; graduates, 164. The next fall term begins Oct. 1, 1901.

Hering Medical College.—Homeopathic. This school was organized in 1892. The faculty comprises 23 professors and 13 associates, lecturers, etc., in all 36. Hering College Hospital, National Temperance and Cook County Hospitals supply clinical facilities. The course covers four years of seven months each. The total fees for a full course are $300 The Dean is Dr. H. C. Allen, 5142 Washington Ave., Chicago. Total registration for 1900-1 was 60; graduates, 12. The tenth session begins Oct. 1, 1901, and ends April 11, 1902.

Jenner Medical College.—This is an evening school, organized in 1892. The faculty consists of 24 professors and 8 assistants, 32 in all. Cook County Hospital and college dispensary supply clinical material. This college conforms to the requirements of the Association of American Medical Colleges. The course covers four years of forty-two weeks each and embraces laboratory, didactic and clinical instruction. The total fees each year are $100, with a $5 matriculation fee, paid but once. The Secretary is Dr. Stuart Johnstone, 34 Washington St., Chicago. Total enrolment for 1900-1 was 101; graduates, 13. The next session begins Sept. 2, 1901, *and ends June 19, 1902.*

Harvey Medical College.—This is a night school and was organized in 1894. The faculty comprises 39 professors and 8 assistants, demonstrators, etc., 47 in all. The college dispensary, having departments for both indoor and outdoor patients, where one evening clinic a week is held, furnish most of the material for clinical study. The requirements for admission are those of the Association of American Medical Colleges. The course covers four years of ten months each. Total fees for the first three years are about $130 each, and for the fourth year $150. The Secretary is Dr. J. Chase Stubbs, Chicago. Total registration for 1900-1 was 270; *graduates*, 17. The eighth session opened Sept. 2, 1901, and closes June 28, 1902.

Illinois Medical College.—This school was organized in 1894 and has a faculty made up of 24 professors and 15 assistants, associates, etc., a total of 39. A college dispensary and Cook County Hospital are available for clinical study. The requirements for admission are based on those of the Association of American Medical Colleges. A continuous course consisting of four terms to the calendar year is offered, two terms of three months each constituting a college year. F[illegible] necessary for graduation, and forty-two [illegible] tween that time and matriculation. Total [illegible] ach year. The Dean is Dr. B. B. Eads, Chi[illegible] for 1900-1 was 202; graduates, 36. The next fall term begins Oct. 1, 1901.

Dunham Medical College.—Homeopathic. This was organized in 1895 and has a faculty of 31 professors and 8 associates and lecturers, in all 39. Cook County Hospital, Garfield Park Sanitarium, St. Anthony's Hospital and a college dispensary supply the clinical facilities. Four years' work of seven months each is required for graduation. The fees are about $110 for each year. The Dean is Dr. James T. Kent, 92 State St., Chicago. Total registration for 1900-1 was 122; graduates, 18. The eleventh session begins Sept. 24, 1901, and ends April 29, 1902.

American Medical Missionary College.—This school was organized in 1895, and has the primal object of educating men and women to act as missionaries and emphasize their religious teachings through their ability to heal the body. The faculty comprises a total of 21 teachers. The didactics and laboratory work, covering the first two years, is carried on at Battle Creek, Mich., and the clinical studies in Chicago. A hospital with 20 beds, in connection wit[illegible] with a college dispensary, containing an [illegible] supply material for practical work. The requirements are based upon those of the Association of American Medical Colleges. The course covers four years of nine months each. Total fees are $120 for each of the four years. The Secretary is Dr E. L. Eggleston, Battle Creek, Mich. Total registration for 1900-1 was 119; graduates, 13. The seventh session opens Sept. 25, 1901, and closes June 24, 1902.

College of Medicine and Surgery.—Physio-Medical. This school was organized in 1896 and has a faculty of 31 teachers. A college dispensary supplies material for clinical work. The course covers four years of seven months each. Fees for the first year, $100; for the second and third, $95 each, and $110 for the fourth. The Dean is Dr. H. P. Nelson, 631 Jackson Blvd., Chicago. Total registration for 1900-1 was 46; graduates, 9. The next session begins Sept. 26, 1901, and ends April 26, 1902.

National Medical University.—This was organized in 1889, and from the catalogue it seems to grant any degree desired, whether medical, dental or osteopathic, and to offer instruction at any time, whether day or night, summer or winter. A teaching force of 61 is shown, and it claims to require of applicants for admission the equivalent of a standard high school education. A four-year course of thirty-nine weeks each is claimed to be necessary for graduation. The total fees are $100 for each year, but "when the fee—$300 for the entire *osteopathic course* is paid in advance, the student may take the entire medical course and obtain the degree, Doctor of Medicine, without any further charge." Its degrees are recognized by the Illinois State Board of Health. Total matriculants for 1900-1 were 144; graduates in March were 6, and in June 6, a total of 12.

Chicago Eclectic College.—The first session of this school will begin September 17. It has not yet been recognized by the Illinois State Board of Health.

INDIANA.

Indiana, population 2,516,462, has five medical colleges. Four are situated in Indianapolis, with 169,164 people: The Physio-Medical College, Central Medical College of Indiana, Central College of Physicians and Surgeons, and the Eclectic Medical College. The clinical facilities of Indianapolis are good and board and lodging can be obtained from $2.50 a week upwards.

The Fort Wayne College of Medicine is situated in Fort Wayne, a railroad and manufacturing town of 45,115 inhabitants. Board and room can be obtained there at an average of $3 a week.

Indianapolis.

Physio-Medical College.—This school was organized in 1873 and has a teaching force of 29. The course has been lengthened to four years of 26 weeks each, beginning with this school year. Total fees for the four years are $65 each. The Secretary is Dr. C. T. Bedford, Indianapolis. Total enrolment, 1900-1, was 34; graduates, 9. The next session begins Oct. 1, 1901, and closes April 2, 1902.

Medical College of Indiana.—This is the medical department of the University of Indianapolis and was organized in 1878. The faculty embraces 25 professors and 32 adjuncts, lecturers, etc., a total of 57. The City Hospital, *containing 200 beds; Indianapolis* Dispensary, Central Hospital for the Insane, with a capacity for 1800 patients; St. Vincent's and the Maternity Hospitals, and a college dispensary provide clinical facilities; the wards in the charity hospitals are open to students of this college for bedside instruction. The laboratory and lecture-room space is ample. This college is a member of the Association of American Medical Colleges and the requirements for admission are those of that organization. The course extends over four years of seven months each. Fees: First and second *years*, $80 each; *third, $75, and* $100 for the fourth year. The Dean is Dr. Henry Jameson, 28 E. Ohio St., Indianapolis. Total enrolment for 1900-1 was 253; graduates, 46. The thirty-second session *opens* September 24, 1901, and closes April 24, 1902.

Central College of Physicians and Surgeons.—This school was organized in 1879, and has a faculty of 22 *professors*, and 21 lecturers, demonstrators, etc., 43 in all. The City Hospital, Central Hospital for the Insane, City Dispensary, and a college dispensary supply material for clinical teaching. Applicants for admission must show educational requirements prescribed by the Association of American Medical Colleges, of which the school is a member. Instruction is by means of laboratory, didactic and clinical teaching, and the equipment is ample. The course of study covers four years of six months each. Fees: First year, $100; second, $110; third, $50, and $75 *for the fourth year*. The Dean is Dr. Samuel E. Earp, Indianapolis. Total registration for 1900-1 was 87; graduates, 23. The *present* session opened September 20, 1901.

Eclectic Medical College.—Eclectic. This school was organized two years ago and claims a teaching force of 22. The requirements for admission claimed are those of the National Confederation of Eclectic Medical Colleges. The catalogue shows a four-year course of six months each. A total of 14 students matriculated for 1900-1.

Fort Wayne.

Fort Wayne College of Medicine.—This school was organized in 1879 and has a faculty of 24 professors, and 7 lecturers and assistants, a total of 31. St. Joseph's Hospital, with a capacity of 350 patients; Hope Hospital, with 200 beds; St. Roche's Hospital, having accommodation for 35 patients; Indiana School for Feeble-Minded Youth and Allen County Orphan Asylum, capable of holding 150 children, supply the clinical facilities. This school is a member of the Association of American Medical Colleges and the requirements *and rules* are *those* of the Association. The curriculum covers four years of six *months each*. The course is practical, supplemented by lectures and laboratory work. The total fees for each year *are* $75, *with an* additional $5 matriculation fee, payable once. The Dean is Dr. C. B. Stemen, 25 Broadway, Fort Wayne. Total number of students registered 1900-1 was 35; graduates, 4. The present session opened September 11, 1901, and closes March 25, 1902.

IOWA.

Iowa, population 2,231,853, contains five medical colleges. They are: College of Medicine of the State University of Iowa, College of Homeopathic Medicine of the State University of Iowa, Iowa College of Physicians and Surgeons, Sioux City College of Medicine, and Keokuk Medical College, College of Physicians and Surgeons.

Iowa City.

College of Medicine of the State University of Iowa.—This is situated in Iowa City, *population* 7987, and was organized as the Medical Department of the State University in 1870. The faculty is made up of 14 professors, 7 lecturers, and 10 demonstrators and assistants, a total of 31. The University Hospital, built in 1897 at a cost of $50,000, contains separate surgical, gynecological, medical, ophthalmological and laryngological operating rooms and furnishes good clinical material. A well-equipped hospital also supplies clinical material. Applicants *for* admission must conform to the requirements of the Association of American Medical Colleges, of which this college is a member. The course of study covers four years of thirty-six weeks each, *embracing* graded laboratory, *didactic and clinical* work. Combined courses leading to more *than* one degree are offered. Total fees for each year is $65. Board and lodging costs from $2.50 *to* $5 per week. The Dean is Dr. William D. Middleton, Iowa City. Total *number* of students registered *for 1900-1* was 272; graduates, 35. The thirty-second course of lectures opened September 19, and will end June 12, 1902.

College of Homeopathic Medicine of the State University of Iowa.—This is a department of the State University and was organized in 1877. The faculty is composed *of 10* professors, and 9 lecturers *and* assistants, a total of 19, but some of these are of the faculty of the College of Medicine. The requirements for admission, and the work, with the exception of that pertaining to homeopathy, are the same as those for the other department. The fees are also the same. The Dean is Dr. Gorge Royal, Iowa City. Total registration for 1900-1 was 59; graduates, 16. The twenty-fifth session began September 19, and will end June 12, 1902.

Des Moines.

The Iowa College of Physicians and Surgeons.—This is the Medical Department of Drake University and is located in Des Moines, a city of 62,139 inhabitants. It was organized in 1882. The faculty contains 17 professors and 6 assistants, a total of 23. Mercy Hospital furnishes clinical material and attendance upon clinics is required the same as upon lectures. The requirements for admission are those determined by the Association of American Medical Colleges, to which this school belongs. Instruction is given by means of lectures, recitations, demonstrations, laboratory work and hospital clinics. The work covers a graded course of four years, of nine months each. Board and lodging can be obtained for $15 a month. The total fees for the first two years are $80 each, and for the last two years, $75 each. The Dean is Dr. Lewis Schooler, Des Moines. The total registration for the year 1900-1 was 78; graduates, 14. The twentieth session began September 18, and will end June 13, 1902.

Sioux City.

Sioux City College of Medicine.—This is located in Sioux City, population 33,111, and was organized in 1891. The faculty is made up of 14 professors and 1 demonstrator, 15 in all. Clinical material is supplied by St. Joseph's, Mercy and Samaritan Hospitals, and a college dispensary. The requirements for admission are those of the Association of American Medical Colleges, of which this college is a member. The system of study embraces a four-year graded course, eight months being a school year. Final examinations are held at the close of each course of instruction. Matriculation fee, paid but once, $5; tuition, each year, $48; hospital fee, $5, and graduating fee, $20. The Dean is Dr. H. A. Wheeler, Sioux City. Total number of students registered 1900-1 was 52; graduates, 5. The twelfth session opened September 10, and will close April 30, 1902.

Keokuk.

Keokuk Medical College, College of Physicians and Surgeons.—In 1849 the College of Physicians and Surgeons, Keokuk, was organized and four years later it became the Medical Department of the University of Iowa, continuing as such until 1870, when the original name was resumed. By the union, in 1899, of this college with the Keokuk Medical College, organized in 1890, the present school under the above name was founded. Situated in Keokuk, a town of 14,641 people, and drawing much from the surrounding country, the clinical material is good. St. Joseph's Hospital, under the charge of the Sisters of St. Francis, is open to the student for study and the clinics held there are large and varied. The faculty is composed of 17 professors and 1 demonstrator, 18 in all. This college is a member of the Association of American Medical Colleges and the requirements for admission are those of that organization. The studies embrace a graded course of four years, seven months to the year. Board and room can be secured for from $2 to $4 per week. The total fees for the first year are $63; for the second and third, $58 each, and $53 for the last year. The Secretary is Dr. Oliver D. Walker, Keokuk. Total registration for 1900-1 was 247; graduates, 51. The next session begins October 1, 1901, and ends April, 1902.

KANSAS.

Kansas, population 1,470,495, has three medical colleges, as follows: School of Medicine of the University of Kansas, located in Lawrence; Kansas Medical College in Topeka, and the College of Physicians and Surgeons, situated in Kansas City.

Lawrence.

School of Medicine of the University of Kansas.—This school does not confer the degree of Doctor of Medicine. It is situated in Lawrence, a town with 10,862 inhabitants, and was organized in 1880 as a department of the University of Kansas. The faculty is composed of 4 professors, 7 associates and assistants, and 7 lecturers, demonstrators, etc., a total of 18. This school is a member of the Association of American Medical Colleges and the requirements for admission are those of that Association. Only the purely scientific subjects are taught, but the work in these is thorough, seventy-two weeks being devoted to the two-year course. The greater part of the work is in the laboratory, with recitations and assigned readings, the lectures being supplementary only. For this reason the equipment and arrangement of the laboratories have been given special attention. A combined course of four years is offered, conferring the degree of Bachelor of Arts in Medicine. The total fees to residents of the state are: For the first year, $60, and for the second, $30; non-residents of the state are required to pay $25 additional for each year. The average cost of board and lodging is $3.75 a week. The Dean is Dr. S. W. Williston, Lawrence. The number of students registered for 1900-1 was 47. The present session began September 11, and will end June 11, 1902.

Topeka.

Kansas Medical College.—This college was organized in 1890 and is situated in Topeka, population 33,608. Its faculty is composed of 27 professors and 6 lecturers and assistants, 33 in all. Good material for both medical and surgical clinics is found in Christ's Hospital, with 100 beds; Riverside Hospital and Dispensary, and Topeka State Hospital; the dispensary at the college also supplies material for class demonstration. The requirements for admission are those prescribed by the Association of American Medical Colleges, of which this school is a member. The college building affords ample laboratory and lecture-room space. The course of study is a graded one covering four years of twenty-six weeks each. Individual instruction is especially aimed at. The total fees for the first two years are $70 each, and $68 each for the last two years. The cost of board and room varies from $2.50 to $4 a week. The Dean is Dr. John E. Minney, Topeka. The total registration for 1900-1 was 98; owing to the change from a three to a four-year course there was no graduating class in 1901. The twelfth session began September 10, and will close March 21, 1902.

Kansas City.

College of Physicians and Surgeons.—This was organized in 1894 as the Medical Department of Kansas City University, and is situated in Kansas City, a city with a population of 51,418. The faculty is made up of 29 professors, 3 lecturers, and 5 demonstrators and assistants, a total of 37. Bethany Hospital, with 60 beds; St. Margaret's Hospital, a college dispensary, and an outdoor obstetric department supplies clinical material. Practical demonstration and bedside teaching is emphasized in the work. It is claimed that the requirements for admission are in accordance with the rules of the Association of American Medical Colleges, but this college is not a member. The course of study is a graded one of four years, seven months each. A scholarship is offered for $175, but taken separately the total fees for the first three years are $60 each, and for the fourth year, $50; a matriculation fee of $5, payable but once, is charged. The Dean is Dr. J. W. May, Topeka. The total registration of students for 1900-1 was 87; graduates, 31. The eighth session opened September 3, 1901, and will close March 26, 1902.

KENTUCKY.

Kentucky, population 2,147,174, has eight medical colleges. They are all situated in Louisville, a growing city of 204,731 inhabitants, and are as follows: University of Louisville Medical Department, Kentucky School of Medicine and Hospital, Louisville Medical College, Hospital College of Medicine, Southwestern Homeopathic Medical College, Kentucky University Medical Department, Louisville National Medical College, and Medical Department of State University. Board and lodging can be obtained in Louisville from $2.50 to $4 per week.

Louisville.

University of Louisville Medical Department.—This school was organized in 1837, under the name, Louisville Medical Institute, and in 1846 it assumed its present title. It has a faculty of 8 professors, 3 clinical professors, 26 lecturers, demonstrators, etc., a total of 37. The University Hospital, City Hospital, St. Mary's and St. Elizabeth's Hospitals, together with the college dispensary, furnish good clinical material. Applicants for admission must show that they possess the educational requirements held by the Association of American Medical Colleges, of which this school is a member. The course covers graded work for four years of six months each. Total fees: First year, $107; second, $122; third, $105, and fourth, $112. The Dean is Dr. J. M. Bodine, Louisville. Total registration for 1900-1 was 157; graduates, 35. The sixty-fifth session begins Sept. 23, 1901, and ends March 31, 1902.

Kentucky School of Medicine and Hospital.—This school was organized in 1850, and has a faculty composed of 10 professors, 10 lecturers and 16 instructors and assistants, a total of 36. The College Hospital, City Hospital and the college dispensary furnish the facilities for clinical study. The student is brought directly into contact with the patient through dispensary and bedside work by dividing the classes into sections. This college is a member of the Association of American Medical Colleges, and the requirements for admission are those of that organization. The laboratories and their equipment are good. The curriculum embraces a four years' course of six months each. The fees for the first two years are $110 each; for the third year, $90, and $80 for the fourth year. The Dean is Dr. W. H. Wathen, 658 Fourth Ave., Louisville. Total number of students registered for 1900-1 was 309; graduates, 43. The next session begins Jan. 2, 1902, and will end July 1, 1902.

Louisville Medical College.—This school was organized in 1869 and has a faculty of 10 professors and 13 instructors and assistants, 23 in all. The City Hospital, College Infirmary and a dispensary offer good clinical facilities. Applicants for admission must show by diploma, certificate or examination that they are sufficiently proficient in English, arithmetic, algebra, physics and such Latin as would be acquired in one year's study. The laboratories and lecture rooms are ample. The course of study covers four years of six months each. The total fees for each year are $100. The Dean is Dr. C. W. Kelly, Louisville. Total registration of students for 1900-1 was 196; graduates, 35. The next session opens Sept. 16, 1901, and closes March, 1902.

Hospital College of Medicine.—This school is the medical department of the Central University of Kentucky and was organized in 1873. The faculty is composed of 9 professors, 9 adjuncts and 23 lecturers, demonstrators, etc., a total of 41. The Gray Street Infirmary, City Hospital and a well-equipped college dispensary present good facilities for clinical study. The requirements for admission are those of the Association of American Medical Colleges. Laboratory work, which is a prominent feature of the course, is thorough and practical. The laboratories and amphitheaters are ample in equipment and capacity, and the hospital advantages give opportunity for personal bedside instruction. The course covers four years of six months each. Total fees for each of first two years, $120; for the third year, $85, and $125 for the fourth year. The Dean is Dr. P. Richard Taylor, Louisville. Total enrolment for 1900-1 was 347; graduates, 52. The twenty-eighth session opens Jan. 1, 1902, and closes June 27, 1902.

Southwestern Homeopathic Medical College.—Homeopathic. This college was organized in 1893 and has a faculty of 18 professors and 13 lecturers and assistants, 31 in all. A college dispensary supplies clinical material. The curriculum covers four years of seven months each. Total fees: First year, $85; second, $80; third, $170, and $65 for the fourth year. The Dean is Dr. A. L. Monroe, Louisville. Total number of students for 1900-1 was 33; graduates, 11. Next session opens Oct. 1, 1901, and closes April 29, 1902.

Kentucky University Medical Department.—This school was organized in 1898 and is the medical department of the Kentucky

University. The faculty is composed of 13 professors, 22 lecturers, demonstrators, etc., 35 in all. Broadway Infirmary, the City Hospital, and a college dispensary furnish clinical material. The requirements for admission are those of the Association of American Medical Colleges, this school being a member of that organization. The buildings provide ample facilities for clinical, laboratory and didactic instruction. The course of study embraces graded work of four years of at least twenty-five weeks each. Total fees: First year, $120; second, $110; third, $95, and $115 for the fourth year. The Dean is Dr. Thomas C. Evans, 419 W. Chestnut St., Louisville. Total number of students registered in 1900-1 was 204; graduates, 20. The next session opens Jan. 1, 1902, and closes June 26, 1902.

Medical Department of State University.—This is a school for colored students organized in 1899. The faculty has 8 professors. The catalogue claims a four-year course of six months each. Total matriculants for 1900-1 were 12.

Louisville National Medical College.—Colored. This was chartered in 1888 and shows a teaching force of 15. The catalogue claims a four-year course, six months to the year; the total fees are about $44 for each year. Total enrolment for 1900-1 was 21; graduates, 4.

LOUISIANA.

Louisiana, having a population of 1,381,625, contains two medical colleges: Medical Department of the Tulane University of Louisiana and New Orleans University. They are both situated in New Orleans, a city of 287,104 people. The cost of room and board is from $10 to $22 a month.

Medical Department of the Tulane University of Louisiana. This school was organized in 1834 as the Medical College of Louisiana, and in 1884 it was incorporated under its present name, but remained the medical department of the State University. The faculty embraces 7 professors, and 17 lecturers, instructors, etc., 24 in all. By acts of legislature the Charity Hospital, with its 900 beds, has been opened to the students of this school for clinical study not only in medicine and surgery, but also in obstetrics and gynecology. In the year 1900 there were 8301 cases treated in the wards of this hospital; these were indoor patients, and, in addition to these, 19,058 outdoor patients were treated in the free dispensary, a department of the hospital. The Milliken Memorial Hospital, with a capacity for 200 children, is also available for study of clinical cases. Bedside instruction is given by the attending physicians to these hospitals, and postmortem examinations are held before the students. This college is a member of the Southern Medical College Association and its requirements for admission are those of that organization. The laboratories are large and well equipped, and the lecture and recitation rooms are ample. The course of study covers four years of six months each. Total fees for the first two years are $135 each, and for the third and fourth, $145 and $165, respectively. The Dean is Dr. Stanford E. Chaille, New Orleans. Total number of students registered for 1900-1 was 390; graduates, 114. The sixty-seventh session begins October 31, 1901, and will close April 30, 1902.

Medical College of New Orleans University.—Colored. This school was organized in 1889 as the Medical Department of New Orleans University. It is devoted to the education of negro students. The faculty is made up of 6 professors and 3 instructors, 9 in all. Clinical material is supplied by the Sarah Goodridge Hospital and by an outdoor clinic. The rules for admission are those of the Association of American Medical Colleges, of which this college is a member. The curriculum covers a graded course of four years, twenty-six weeks each. The laboratories and lecture rooms are ample. Examinations are held monthly. Total fees for the first year are $34; for the second, $37.50; third, $36.50, and $40 for the last year. The Dean is Dr. H. J. Clements, New Orleans. Total enrolment for 1900-1 was 32; graduates, 2. The thirteenth college year began September 3, and will end March 3, 1902.

MAINE.

Maine, population 694,466, has one medical college:

Medical School of Maine.—This is the Medical Department of Bowdoin College and is situated in Brunswick, a town with 5210 inhabitants; it was organized in 1820. The faculty is composed of 13 professors and 5 assistants, 18 in all. The clinical facilities are supplied by the Maine General Hospital. Applicants for admission, unless they possess a diploma, are examined in English, arithmetic, algebra, geometry, United States history, physics, chemistry and Latin. The course covers four years of twenty-six weeks each. The total fees are $120 for the first year; for the second and the third, $110, and $130 for the fourth year. Board and lodging cost from $3 to $5 a week. The Dean is Dr. Alfred Mitchell, Brunswick. Total number of students enrolled for 1900-1 was 90; graduates, 40. The next session opens December 26, 1901, and closes June 26, 1902.

MARYLAND.

Maryland, with a population of 1,188,044, contains eight medical colleges. They are all located in Baltimore, a city with 508,957 inhabitants, and they are as follows: School of Medicine of the University of Maryland, College of Physicians and Surgeons, Baltimore University School of Medicine, Baltimore Medical College, Woman's Medical College, Southern Homeopathic Medical College, Johns Hopkins Medical School, and Maryland Medical College. The Bay View Hospital, having a capacity for 2,000 patients, is open to students for clinical instruction, and furnishes good opportunities for practical demonstrations. Board and lodging can be obtained for from $3 to $5 per week.

School of Medicine of the University of Maryland.—This institution was organized in 1807 as the College of Medicine of Maryland, and in 1812, other faculties having been added, the whole was chartered under the name of the University of Maryland. The faculty is composed of 14 professors, 21 clinical and associate professors, and 24 lecturers, demonstrators, etc., a total of 59. The University Hospital, a part of which is used for a hospital for foreign seamen and another portion for a free city hospital, offers excellent clinical facilities. Besides this, the Presbyterian Eye, Ear and Throat Charity Hospital, in which 10,734 patients were treated in 1900; the Hospital for the Relief of Crippled and Deformed Children, containing 40 beds; the Maternity Hospital, and a college dispensary furnish material for clinical study. This school is a member of the Association of American Medical Colleges, and its requirements for matriculation are those specified by that Association. The laboratories and lecture rooms are ample and well equipped. The fourth-year class, divided into sections, receives special training in practical laboratory work in a well-appointed clinical laboratory. Didactic, laboratory and clinical instructions, special attention being paid to bedside work, make up the system of teaching. The course covers four years of seven months each, and is graded. The total fees for the first two years are $120 each; for the third year, $110, and $140 for the final year. The Dean is Dr. R. Dorsey Coale, Baltimore. The total number of students registered in 1900-1 was 332; graduates, 71. The ninety-fifth session begins Oct. 1, 1901, and will terminate May 1, 1902.

College of Physicians and Surgeons, Baltimore.—This school was organized in 1872, and in 1878 Washington University School of Medicine, established in 1827, was consolidated with it. The faculty embraces 16 professors, 18 associate and clinical professors, and 18 demonstrators and assistants, a total of 52. The clinical facilities, besides those afforded in common with other schools, are supplied by the Baltimore City Hospital, the Hospital for the Colored Race, containing 100 beds; the Nursery and Child's Hospital, with 150 beds; the Maryland Lying-in Asylum, and a college dispensary. The requirements for admission are those established by the Association of American Medical Colleges, of which this school is a member. The work covers a graded course of four years, seven months constituting a year. The laboratories are well lighted and supplied with complete equipment; one important addition is the clinical laboratory for practical work. A skiascopic laboratory is also a recent addition and instructs the students in the use of the *x*-ray apparatus. Total fees for the first three years are $115 each, and $135 for the last year. The Dean is Dr. Thomas Opie, Baltimore. The total number of students registered in 1900-1 was 359, of which number 59 were graduates. The next session opens Oct. 1, 1901, and closes April 15, 1902.

Baltimore Medical College.—This college was organized in 1881, and has a faculty made up of 26 professors, 5 lecturers, 3 associates and 11 demonstrators and assistants, 45 in all. The clinical material is furnished by the Maryland General Hospital, having a capacity of 200 beds; the Maryland Lying-in Hospital, in which 171 deliveries took place in 1900; the Mount Hope Retreat, which presents good opportunity for the study of nervous and mental diseases, and a college dispensary, which, besides the great number of ambulatory patients treated, has an outdoor department that permits of the advanced student taking care of charity cases and carrying out his own treatment. Requirements for admission are those of the Association of American Medical Colleges, to which this college belongs. The college buildings afford ample laboratory, clinical and lecture-room space. Bedside teaching in the hospital wards is carried on in sections and every member of the senior class is required to attend throughout the session. The course of study is graded and covers four years of seven months each. The Dean is Dr. David Streett, Baltimore. The total number of students registered in 1900-1 was 507; graduates, 97. The twenty-first session opens Sept. 26, 1901, and closes April 19, 1901.

Woman's Medical College.—This school was organized in 1882 and has a faculty of 14 professors, 5 adjunct professors, and 9 assistants and lecturers, a total of 28. The Hospital of the Woman's Medical College, Presbyterian Eye, Ear and Throat Charity Hospital, St. Mary's Asylum and a college dispensary furnish clinical material. The college is a member of the Association of American Medical Colleges, [illegible] sion are controlled by the rules of that [illegible] ories and lecture rooms are equipped wit [illegible]. the practical work is emphasized. Eig [illegible] ol year, and the course covers graded work for four years. The total fees for the first three years are $105 each, and $85 for the last year. Total number registered for 1900-1 was 31; graduates, 7. The twentieth session opens Oct. 1, 1901, and closes June 5, 1902.

Baltimore University School of Medicine.—This school was organized in 1884, and has a faculty made up of 12 professors, and 11 lecturers, demonstrators, etc., in all 28. The Baltimore University Hospital, Lying-in Hospital and the clinical material used in common with the other schools, supply the facilities for practical work. In the hospital wards the student is given bedside instruction, and in surgical clinics the students act as assistants in the operations, and are taught to administer anesthetics. The requirements for admission are those of the Association of American Medical Colleges, of which this college is a member. The college dispensary affords much clinical material and the students, under the direction of the physician in charge, make calls and treat patients at their homes. The lecture rooms and laboratories are ample, and the course of instruction, which consists of graded work for four years of six months each, is practical. The total fees for the first two years are $100 each; for the third year, $80, and $110 for the fourth year. The Dean is Dr. Hampson H. Biedler, 119 W. Saratoga St., Baltimore. Total registration for year 1900-1 was 66; graduates, 31. The eighteenth session opens October 1, 1901, and closes April 15, 1902.

Southern Homeopathic Medical College.—Homeopathic. This school was organized in 1890, and has a faculty of 13 professors, 3 associate professors, and 23 lecturers and demonstrators, a total of 39. The clinical facilities are those offered by the Maryland Homeopathic Hospital, which has 55 beds, and the dispensary; the obstetric department also furnishes clinical material. Applicants for matriculation must pass a satisfactory examination in English, arithmetic, geography, history, and Latin, unless they possess satisfactory evidence that they have done a corresponding amount of work. The course covers graded work for four years, seven months to the year. The fees are $105 for the first year, $100 each for the second and third, and $130 for the last year. The Dean is Dr. George T. Shower, 421 Roland Ave., Baltimore. Total registration 1900-1 was 32; graduates, 10. The eleventh session begins September 30, 1901, and ends May 7, 1902.

Johns Hopkins Medical School.—This is the medical department of Johns Hopkins University and was organized in 1893. The faculty comprises 11 professors, 14 clinical and associate professors, 14 lecturers and associates, and 25 instructors and assistants, a total of 64. The Johns Hopkins Hospital and Dispensary furnishes *abundant and varied clinical material*; the lying-in department of the hospital, opened in 1896, is in successful operation. The requirements for admission demand that the applicant either has, (a) completed the chemical-biologic course which leads to the A. B. degree in the University; (b) graduated at an approved college or scientific school, and can furnish evidence of an acquaintance with Latin and a fair reading knowledge of French and German, and such knowledge of physics, chemistry and biology as above indicated. If the candidate is unable to show this, he must pass a satisfactory examination covering this ground. This school is a member of the Association of American Medical Colleges. The anatomic, physiologic, pathologic and clinical laboratories are large, well lighted and well equipped. The buildings are ample and built expressly for the purpose for which they are used. In the method of instruction special emphasis is laid upon practical work in the laboratories, dispensary and in the wards of the hospital. The first two years is devoted to practical work in the laboratories, combined with demonstrations, recitations and lectures, and during the remainder of the course opportunity for the personal study of cases is given. The work covers a graded course of four years, eight months to the year. Final examinations, partly written and partly oral, include practical tests in laboratory and clinical work; the general character of the student's work is closely watched. The charge for tuition is $200 per annum, with no fees unless a microscope is rented: that fee is $5 a year. The Dean is Dr. William H. Howell, 232 W. Lanvale St., Baltimore. Total registration in 1900-1 was 209; graduates, 54. The ninth session begins October 1, 1901, and ends June 15, 1902.

Maryland Medical College.—This school was organized in 1898, and has a faculty of 14 professors, and 11 associates, lecturers, etc., 25 in all. The Franklin Square Hospital and a college dispensary furnish clinical material. The course of study covers three years of eight months each, but after October, 1902, all students matriculating will be compelled to take a four-year course. A matriculation fee of $5 and total laboratory fees for the three years of $45 is charged; the tuition for full course is $65 each year. The Dean is Dr. J. Wm. Funk, Baltimore. Total registration for 1900-1 was 75; graduates, 29. The fourth session begins October 1, 1901, and closes May 15, 1902.

MASSACHUSETTS.

Massachusetts, population 2,805,346, has four medical colleges: Medical School of Harvard University, Boston University School of Medicine, College of Physicians and Surgeons, and Tuft's College Medical School. They are all situated in Boston, a city of 500,892 inhabitants, and enjoy in common the following clinical advantages: The Massachusetts General Hospital, in which during the past year 5086 patients were treated in the wards and 31,003 in the out-patient departments; the Boston City Hospital, where during that time 8719 ward patients and 22,640 out-patients were treated, and the Massachusetts Charitable Eye and Ear Infirmary, which furnished treatment for 22,349 patients during the past year. Library facilities are good. Board and lodging can be obtained for from $5 to $7 per week.

Medical School of Harvard University.—This was organized in 1872 as the Medical Department of Harvard University, and has a faculty composed of 20 professors, 10 associates and assistants, and 1 demonstrator, a total of 31. Besides the clinical advantages mentioned, the Boston Lying-in Hospital, the Boston Dispensary, where 43,918 patients were treated last year; the Infants' Hospital, the Children's Hospital, Long Island Hospital, containing 250 beds, and the Marine Hospital all furnish excellent opportunity to the student for clinical study. Students are also permitted to visit the Free Hospital for Women and Carney Hospital on application to the physicians on duty. Candidates for admission "must present a degree in Arts, Literature, Philosophy or Science from a recognized college or scientific school, with the exception of such persons, of suitable age and attainments, as may be admitted by special vote of the faculty in each case." Each candidate is required to hand in the original note-book in which he recorded the work performed by him in qualitative analysis, and also to pass a written examination in theoretical and descriptive chemistry. If conditioned in chemistry one year is allowed in which to remove the condition. The laboratories and lecture rooms offer ample facilities and the equipment is good; special facilities are open to those desiring to pursue advanced or original work. The course of study covers four years of nine months each; the course is graded, and each correlated group as taken up presents sufficient variety to avoid monotony. A series of written, oral and practical examinations are distributed throughout the course of study. Fees: Matriculation, $5; for the first three years, $200 each, and for the last year, if the three previous years have been taken in this school, $130; total of other fees charged is $22. The Dean is Dr. William L. Richardson, 688 Boylston St., Boston. Total registration for 1900-1 was 591; graduates, 116. The 120th session begins September 26, 1901, and ends June 26, 1902.

Boston University School of Medicine.—Homeopathic. This school was organized in 1873; in 1874 the New England Female Medical College, founded in 1848, was merged into it. The faculty includes 17 professors, 21 associates and lecturers, and 20 instructors and assistants, a total of 58. Clinical material is furnished by the Massachusetts Homeopathic Hospital, containing 225 beds, and a dispensary and maternity hospital. Candidates who have taken their degree in arts, philosophy or science, are not examined; all others are examined in English, Latin, French or German or history, mathematics and physics. The instruction is graded and covers a period of four years, eight months each. Total fees for the first year is $105; for the second and third, $125 each, and for the last year, $155. The Dean is Dr. John P. Sutherland, 295 Commonwealth Ave., Boston, Mass. Total registration for 1900-1 was 127; graduates, 24. The twenty-ninth session opens October 3, 1901, and closes June 6, 1902.

College of Physicians and Surgeons.—This school was organized in 1880, and has a faculty of 24 professors, and 9 lecturers and assistants, a total of 33. Clinical facilities are furnished by the North End Hospital and Dispensary, Union General Hospital, and the city and state institutions. The requirements for admission are those of the Association of American Medical Colleges, of which this school is a member. The course of study covers graded work for four years of eight months each. The total fees for the first year are $100, and for each of the other years about $110, with a graduating fee of $30. The Registrar is Dr. John H. Jackson, 155 Franklin St., Fall River. Total students registered 1900-1 was 127; graduates, 9. The twelfth session begins September 25, 1901, and ends June 26, 1902.

Tufts College Medical School.—This school was organized in 1893 as the Medical Department of Tuft's College. It has a faculty of 16 professors, 6 assistant professors and 31 lecturers, instructors and assistants, a total of 53. Clinical material is furnished by the Boston Dispensary, Cambridge Hospital, St. Elizabeth's Hospital, Carney Hospital and the college dispensary; the student has also the advantages derived from an out-department in connection with the Boston Dispensary. "Graduates of a high school, college or university, and students having certificates of entrance to a college or university, or holding the state of New York Regents' certificate," also certain approved preparatory school graduates, are admitted without examination; all others must pass an examination in English, Latin, physics and mathematics, including arithmetic, elementary algebra and plane geometry. The laboratories and lecture rooms are ample in their equipment and capacity. Teaching is carried on by means of lectures, recitations and practical work in the laboratories and clinics; frequent examinations are held during a course and a final examination on completing the subject. Graded instruction covering four years of eight months each makes up the full course. The total fees is $125 each year; dissecting material is furnished at cost. The Dean is Dr. Harold Williams, 528 Beacon St., Boston, Mass. Total number of students for 1900-1 was 277; graduates, 35. The ninth session begins October 2, 1901, and ends May 28, 1902.

MICHIGAN.

Michigan, population 2,420,982, has seven medical colleges. Two of these, University of Michigan Department of Medicine and Surgery and the Homeopathic College of the University of Michigan, are located at Ann Arbor, a town of 14,509 people. Board and lodging cost from $2.50 to $5 a week. Detroit, a city of 285,704 inhabitants, contains three medical colleges, as follows: Detroit College of Medicine, Detroit Homeopathic College and the Michigan College of Medicine and Surgery. Board and room can be obtained for $3 a week upwards. Grand Rapids Medical College is located in Grand Rapids, population 87,565, and here the cost of room and board is from $3 to $3.50 a week. The other school, Saginaw Medical College, is located in Saginaw, a city having a population of 42,345. Board and lodging can be procured for from $3 to $4.50 a week.

Ann Arbor.

University of Michigan Department of Medicine and Surgery.—This department of the State University was organized in 1850 and has a faculty composed of 12 professors, 15 associates and lecturers, and 39 instructors, assistants, etc., a total of 66. The University Hospital, together with a lying-in department, furnish the clinical facilities. Beginning January 1, 1901, the requirements of admission provide that the applicant either by certificate or examination show a sufficient knowledge of the following: English grammar, rhetoric and composition, United States and general history, algebra, through quadratics, plane and solid geometry and plane trigonometry; physics, biology and chemistry: German or French, and Latin. The laboratories and their equipment are good, and the training in them and in didactic work is thorough. This school is a member of the Association of American Medical Colleges. The curriculum embraces four years of nine months each. A combined course, leading to degrees in both science and medicine in six years, is offered. The total fees for Michigan students for the entire course of four years is about $300, and for others $350. The Dean is Dr. Victor C. Vaughan, Ann Arbor. Total registration for 1900-1 was 563; graduates, 75. The next session begins September 25, and will end June 20, 1902.

Homeopathic College, University of Michigan.—This department of the University was organized in 1875 and has a faculty of 6 professors, 3 assistants and 2 non-resident lecturers; the remainder of the teaching force utilized is that of the other departments of this University. The Homeopathic Hospital, containing 140 beds, furnishes material for clinical teaching. The course covers four years of nine months each. The total fees for Michigan students are about $240 for the four years, and for other students about $295. The Dean is Dr. Walter B. Hinsdale, Ann Arbor. Total enrolment for 1900-1 was 68; graduates, 16. The present session began September 24.

Detroit.

Detroit College of Medicine.—This school was formed in 1885 by the union of Detroit Medical College, organized in 1868.

and the Michigan College of Medicine, established 1880. The faculty embraces 21 professors, 44 lecturers, instructors, etc., and 30 clinical professors, a total of 95. Clinical facilities are offered by the following hospitals: St. Mary's and Harper, each of which contain a free dispensary; Woman's, St. Luke's, the Children's Free Hospital and the House of Providence. This school is a member of the Association of American Medical Colleges and the requirements of admission are those of that organization. The course covers four years of seven months each. The work includes laboratory, didactic and clinical study. Fees: Matriculation, paid once $5; tuition, each term, $60; hospital and laboratory tickets, each $10, and extra senior fees, $40. The Secretary is Dr. H. O. Walker, Detroit. Total enrolment for 1900-1 was 224; graduates, 45. The next session begins September 25, and will close May, 1902.

Michigan College of Medicine and Surgery.—This school was organized in 1888, and has a faculty of 14 professors and 9 assistants, in all 23. Clinical facilities are offered by a college dispensary, the Emergency Hospital and Detroit Eye and Ear Infirmary. This school is a member of the Association of American Medical Colleges and the requirements for admission are those established by that Association. The course covers graded work for four years of seven months each. Fees: For the first two years, $85 each; third year, $70, and $95 for the fourth year. The Dean is Dr. Hal. C. Wyman, 46 W. Adams Ave., Detroit. Total registration for 1900-1 was 75; graduates, 25. The fourteenth session began September 18, and will end April 24, 1902.

Detroit Homeopathic College.—Homeopathic. This was organized in 1899 and has a faculty of 18 professors, and 15 lecturers, assistants, etc., in all 33. Grace Hospital and a college dispensary are available for study of clinical cases. Unless possessing certificate of an equal amount of work completed, applicants for admission will be examined in English, arithmetic, history, geography and elementary Latin. The course embraces work for four years, seven months making a year. Fees: First year, $80; second, $75; third, $65, and $85 for the fourth year. The Dean is Dr. D. A. MacLachlan, Detroit. Total enrolment for 1900-1 was 41; graduates, 4. The next session begins September 25, and will close April 22, 1902.

Grand Rapids.

Grand Rapids Medical College.—This was organized in 1897 as a three-year school, but the catalogue shows that all students matriculating after January 1, 1901, will be compelled to take a four-year course of six months. The faculty is made up of 23 professors and 8 associates, assistants, etc., in all 31. Clinical cases in the U. B. A. Hospital, St. Mary's, Woman's Butterworth Hospitals, and St. John's Orphan Asylum and a college dispensary are available for study. The total fees are in the neighborhood of $65 for each year. The Dean is Dr. E. G. Edwards, Middicomb Bldg., Grand Rapids. Total enrolment for 1900-1 was 47; graduates, 17. Next session opens about October 1, 1901.

Saginaw.

Saginaw Valley Medical College.—This school was organized in 1896, and claims a teaching force of 30. Clinical material is supplied by a college hospital and a college dispensary. The catalogue states that the equivalent education to graduation from a recognized high school is required for admission. The course as shown covers four years of eight months each: Fees: Matriculation, paid once, $5; tuition, each year, $50; laboratory and hospital and dissecting ticket, each $10, and graduation fee, $25. The Secretary is Dr. W. B. Cornell, Saginaw. Total enrolment for 1900-1 was 102; graduates, 24.

MINNESOTA.

Minnesota, population 1,751,394, contains three medical colleges: College of Homeopathic Medicine and Surgery, Hamline University College of Medicine, and College of Medicine and Surgery. They are all situated in Minneapolis, a city with a population of 202,718, and owing to its proximity to St. Paul, the following clinical advantages are available to them: City Hospital, Minneapolis; City Hospital, St. Paul; and St. Luke's and St. Joseph's Hospitals, both in St. Paul. The average cost of board and lodging is $20 a month. An agreement as to requirements for admission has been entered into between the University of Minnesota and Hamline University. They are (a) proof that the candidate has completed work in English composition and rhetoric; history, both ancient and modern; physiology, physics, algebra, geometry, and Latin equal to one year's work, or (b) ability to pass a satisfactory examination in these subjects.

College of Medicine and Surgery.—This is a department of the University of Minnesota and was organized in 1883. Until 1883 its work was only to examine for the degrees of B. M. or M. D., but at that time, with the absorption of the Minnesota Hospital Medical College and the St. Paul Medical College, it was reorganized and its present function assumed. Its faculty is made up of 24 professors, 11 clinical professors, 22 instructors and lecturers, and 20 assistants, a total of 77. Besides the clinical advantages enjoyed in common with the other schools, St. Mary's, St. Barnabas and Asbury Methodist Hospitals, the City and County Hospitals of St. Paul and the St. Paul Dispensary, as well as the college dispensary, all furnish valuable material for clinical study. This college is a member of the Association of American Medical Colleges. The medical buildings, four in number, offer good laboratory and lecture room facilities, and the equipment is all that is needed for thorough instruction. The curriculum covers four years of nine months each and the work is carefully graded. The total fees for each year is $100. The Dean is Dr. Parks Ritchie, Minneapolis. Total number of students registered for 1900-1 was 322; graduates, 60. The next session opens September 23, 1901, and closes June 5, 1902.

Hamline University College of Medicine.—This is the Medical Department of Hamline University, and was organized in 1883. Its faculty is composed of 27 professors, 6 associate and clinical professors, and 12 instructors and assistants, a total of 45. The laboratories and lecture rooms are large, well lighted and supplied with all the necessary equipment. Besides the hospitals mentioned, clinical work is offered to the student in Asbury Methodist Hospital, Barnabas and St. Mary's Hospitals in Minneapolis, Bethesda Hospital in St. Paul, and the college dispensary. This school belongs to the Association of American Medical Colleges. The course of study covers graded work for four years, nine months making a year. Total fees, first year, $87.50; second year, $82.50, and for each of the last two, $75. The Dean is Dr. L. M. Crafts, Minneapolis. Total number of students 1900-1 was 131; graduates, 25. The next session begins September 17, 1901, and ends June 5, 1902.

College of Homeopathic Medicine and Surgery.—This is a department of the University of Minnesota and was organized in 1888. The faculty comprises 17 professors and 5 assistants, 22 in all. The primary branches are taught by the professors of the College of Medicine and Surgery. The course is graded, extending over four years of eight and one-half months each. The total fees for the first two years is $100 each, and $80 each for the last two years. The Dean is Dr. Alonzo P. Williamson, Minneapolis. Total number of students registered in 1900-1 was 26; graduates, 4. The next session opens September 23, 1901, and closes June 5, 1902.

MISSOURI.

Missouri, population of 3,106,665, has fifteen medical colleges. St. Louis, population 575,238, contains six of these, viz., St. Louis College of Physicians and Surgeons, American Medical College, Homeopathic Medical College of Missouri, Marion-Sims Beaumont College of Medicine, Washington University Medical Department, and Barnes Medical College. Board and lodging can be procured for from $3.50 to $5 a week. Kansas City, with 163,752 inhabitants, also has as follows: Kansas City Medical College, University Medical College, the Hahnemann Medical College of Kansas City, Woman's Medical College, Medico-Chirurgical College and Eclectic Medical University. Room and board can be obtained in this city for from $3 to $5 a week. Ensworth Medical College and Central Medical College are located in St. Joseph, population 102,979; board and room can be had for from $2.50 to $5 a week. The Department of Medicine of the University of Missouri is at Columbia, a town of 5651. Board and lodging can be obtained at Columbia for from $2 to $5 a week.

St. Louis.

St. Louis College of Physicians and Surgeons.—This school was organized in 1878, and has a faculty of 21 professors, 19 lecturers, demonstrators, and clinical instructors, and 4 special lecturers, a total of 44. The resources for clinical instruction are Jefferson Hospital, which is open to students of this college only; City Hospital, with 600 beds; French Hospital, having 250 beds; City Insane Asylum; City Poorhouse and the college dispensary. Applicants for admission must show that they are possessed of the requirements prescribed by the Association of American Medical Colleges, of which this college is a member. The laboratory and lecture-room space and the equipment are ample. The course of study covers four years of seven months each, and is graded. Total fees for the first year are $70, second $60, third $50, and $75 for the fourth year. The Dean is Dr. Waldo Briggs, 1405 Olive St., St. Louis. Total number of students registered, 1900-1, was 243; graduates, 52. The twenty-third session began September 17, 1901, and ends April 9, 1902.

American Medical College.—Eclectic. It was organized in 1873, and has a faculty of 14 professors, and 13 clinical instructors, a total of 27. Metropolitan Hospital, containing 40 beds, and a college dispensary supply clinical material. The requirements for admission are those of the National Confederation of Eclectic Medical Colleges, of which this college is a member. The course of study covers four years of twenty-six weeks each. The total fees for the first two years are $80 each, third year $75, and $100 for the fourth year. Total registration for 1900-1 was 75; graduates, 16. The Dean is Dr. E. Younkin, St. Louis. The present session opened September 16, 1901, and closes March 25, 1902.

Homeopathic Medical College of Missouri.—This was organized in 1882 and has a faculty of 26 professors and 5 demonstrators and assistants. Clinical facilities are offered by the City Hospital, Children's Free Hospital and a college dispensary. The curriculum covers four years of seven months each. Fees: First year, $80; second, $75: third, $60, and $85 for the fourth year. The Dean is Dr. W. B. Morgan, St. Louis. Total registration for 1900-1 was 66; graduates, 11. The present session opened September 10. 1901, and closes April 17, 1902.

Marion-Sims Beaumont Medical College.—By the recent union of Marion-Sims, which was organized in 1890, and Beaumont Hospital Medical College, organized in 1886, the present school has been founded. The faculty is composed of 36 professors, 20 lecturers and assistants, and 4 demonstrators, a total of 60. Clinical facilities are offered by Alexian Brothers' Hospital, with 250 beds; St. Mary's Hospital, containing 200 beds; Rebekah Hospital, having a capacity for 50 patients; St. Mary's Infirmary, containing 150 beds; the City Hospital and Insane Asylum, each with a capacity of 600 patients. Grand Avenue Dispensary also furnishes good material for practical instruction. The requirements for admission are those outlined by the Association of American Medical Colleges, of which this college is a member. The buildings afford ample laboratory and lecture-room space and they are well equipped. The course of study embraces laboratory and clinical instruction, with recitations and lectures. The curriculum covers four years of seven months each. The total fees for the first year are $85; for the second and third, $80 each, and $100 for the fourth. The Secretary is Dr. H. W. Loeb, St. Louis. Total number of students registered for 1900-1 was 366; graduates, 87. The next session opens October 1, 1901, and closes May 1, 1902.

Washington University Medical Department.—This school was organized in 1891 from the St. Louis Medical College, which was organized in 1841, and in 1899 the Missouri Medical College, organized in 1840, was added. The faculty comprises 33 professors, 19 clinical professors and lecturers, and 4 instructors, a total of 56 Clinical material is furnished by the St. Louis Mullanphy Hospital, St. John's Hospital, the Polyclinic and Bethesda Hospitals and O'Fallon Dispensary; the out-patient departments also furnish good opportunities for clinical study. In addition to these, the City Hospital, French Hospital, Insane Asylum and Poorhouse is used in common with the other schools. The requirements for admission are claimed to be those of the Association of American Medical Colleges. The college buildings, of which there are two, furnish good laboratory and lecture-room facilities. The course is four years of seven months each, and the system of study embraces laboratory, didactic and clinical teaching. The total fees for the first year, $121: second, $116, and for the third and fourth years, $100 each. The Dean is Dr. J. B. Shapleigh, St. Louis. Total registration of students for 1900-1 was 227; graduates, 54. The next session opens September 26, 1901, and closes May 8, 1902.

Barnes Medical College.—This school was organized in 1892, and has a faculty of 24 professors, 9 lecturers, and 11 assistants and instructors, a total of 44. The clinical advantages are those offered by Centenary Hospital, with 150 beds; City Hospital; the college dispensary and the outdoor obstetrical department. This college is a member of the Association of American Medical Colleges and the requirements for admission are those prescribed by [illegible] The laboratories are well equipped and other [illegible] course of study includes graded work for four [illegible] each. The total fees for the first three years are $75 each, and $85 for the fourth year. The Secretary is Dr. Pinckney French, Century Bldg., St. Louis. Total registration for 1900-1 was 520; graduates, 111. The ninth session opens Sept. 23, 1901, and closes April 11, 1902.

Kansas City.

Kansas City Medical College.—This was established in 1869, and has a faculty made up of 19 professors, and 12 lecturers, demonstrators, etc., in all 31. The clinical facilities are those of St. Joseph's Hospital, which also contains an out-patient department; the City Hospital, St. Margaret's Hospital, Scarritt Hospital, St. Anthony's Home for Children and the college dispensary. This college is a member of the Association of American Medical Colleges and its requirements for admission are governed by the rules of that Association. The building is large and well equipped, the course is graded and the classes in practical work are divided into sections of ten each, in order that personal instruction may be obtained. The curriculum embraces four years of seven months each. The total fees for the first two years are $75 each, for the third $80, and $85 for the fourth. The Dean is Dr. Andrew S. Fulton, Deardoff Bldg., Kansas City. Total registration of students for 1900-1 was 114; graduates, 44. The thirty-third session opened Sept. 17, 1901, and closes March 21, 1902.

University Medical College.—This was organized in 1881 as the University of Kansas City Medical Department and in 1888 was reorganized under its present name. Its faculty comprises 21 professors, 11 adjunct professors and lecturers, and 14 assistants, a total of 46. Clinical material is furnished by the University Hospital, the City Hospital, German Hospital, Home for the Aged, containing 147 beds; the Sisters' Hospital, Scarritt and St. Margaret's Hospitals, the Children's Home, St. Joseph's Orphan Asylum, and the college dispensary and obstetric department. Instruction is given by means of lectures, recitations, demonstrations, and laboratory work and clinics. The requirements for admission are those of the Association of American Medical Colleges, of which this school is a member. The college building, which has been recently enlarged, furnishes ample accommodations for laboratories and lecture rooms. The course of study covers four years of six months each, and the work is graded. The total fees for each of the first two years are $80, for the third $60, and $85 for the fourth year. The Dean is Dr. Samuel C. James, Junction Bldg., Kansas City. The total number of students registered in 1900-1 was 246: graduates, 69. The twenty-first session began Sept. 9, 1901, and ends March 26, 1902.

Kansas City Homeopathic Medical College.—This school was organized in 1888 and has a faculty of 32 men. The City Hospital, Homeopathic Hospital, the Sanitarium, Scarritt, University, Women's and Children's, German, Bethany and Children's Hospitals are open to its students for clinical study. The college dispensary and clinics also supply clinical material. Applicants for admission must show by diploma, certificate or examination that they have a sufficient knowledge of English, arithmetic, geography, United States history, and Latin equal to one year's work. The course covers four years of seven months each. Total registration for 1900-1 was 50; graduates, 12. The fourteenth session began Sept. 9, 1901, and closes April 1, 1902. [Recently consolidated with the Kansas City University College of Homeopathic Medicine and Surgery, under the name, Hahnemann College of Kansas City.]

Woman's Medical College.—This school was organized in 1895, and has a faculty composed of 27 professors, 7 lecturers and assistants, and 3 special lecturers, a total of 37. Material for clinical study and demonstration is furnished by St. Joseph's, Scarritt, German, Sisters', Agnew, St. Margaret's and City Hospitals, and the college dispensary. The requirements for admission are those determined by the Association of American Medical Colleges. The course of study embraces graded work for four years of seven months each. The total fees for the first year are $68; second, $60; third, $55, and $80 for the fourth year. The Dean is Dr. Nannie P. Lewis, 1219 Wyandotte St., Kansas City. Total number of matriculants for 1900-1 was 23; graduates, 9. The seventh session opened September 18, 1901, and closes March 27, 1902.

Medico-Chirurgical College.—This school was organized in 1897 as the Kansas City College of Medicine and Surgery of Kansas City, Kan., and was reorganized the following year under its present name. Its faculty embraces a total of 46. Clinical facilities are furnished by the hospitals of Kansas City used in common by the medical colleges, and a college dispensary. The course covers four years of six months each. The fees are: For the first year, $70; second, $65; third, $55, and $75 for the fourth year. The Dean is Dr. George O. Coffin, Kansas City. Total registration for 1900-1 was 117; graduates, 25. The present session opened September 17, 1901, and closes March 20, 1902.

Eclectic Medical University.—Eclectic. This is a new school, organized in 1898, with 20 names in its faculty. The catalogue claims that the curriculum covers four years of six months each. Fees, about $70 each year, with a graduation fee of $15. The Dean is Dr. C. Palmer, Kansas City. Total students for 1900-1 was 48; graduates, 14. The next session begins Sept. 16, 1901, and ends March 14, 1902.

Columbia.

Department of Medicine of the University of the State of Missouri.—This department was organized at Columbia in 1872. The faculty embraces 9 professors, 8 lecturers and assistants, and 8 instructors, a total of 25. The Parker Memorial Hospital and the Boone County Infirmary supply the clinical material. Applicants for admission are required to show by certificate that they possess educational acquirements which are about equivalent to a good high school education. The laboratories and lecture rooms are large and well equipped; in the scientific work they are the same as used by the other departments of the University, and they are under the charge of the heads of the different chairs. The training in the technical studies and laboratory work is excellent. The course covers four years of nine months each, and the work is graded. A combined course of six years is offered, conferring the degrees of both Arts and Medicine. There is no charge for tuition, the only expense being a library fee of $5 each year and the actual cost of the materials used in the laboratories. The Dean is Dr. A. W. McAlester, Columbia. Total registration of students for 1900-1 was 85; graduates, 11. The present session opened Sept. 10, 1901, and closes June 4, 1902.

St. Joseph.

Ensworth Medical College.—This was organized in 1888, and has a faculty of 18 professors and 5 lecturers and assistants, 23 in all. St. Joseph's Medical Hospital, with 250 beds; City Hospital, containing 40 beds; the State Hospital No. 2, which is open to the students once a week, and a college dispensary furnish clinical material. Applicants for admission must show by certificate or examination, that they possess a sufficient knowledge of English, arithmetic, algebra, physics and Latin equal to one year's instruction. The building furnishes ample laboratory and lecture-room facilities. The curriculum covers a graded course of four years of six months each. The fees are about $55 each for the first three years, and $75 for the fourth year. The Dean is Dr. Jacob Geiger, St. Joseph. The present session opened Sept. 16, 1901, and closes March 17, 1902.

Central Medical College.—This school was organized in 1894, and has a faculty made up of 16 professors and 14 lecturers, in all 30. The Methodist and St. Joseph's Hospitals, State Hospital No. 2, and the City and County Hospitals are available for clinical study; a college dispensary also supplies clinical material. The requirements for admission are the possession of a certificate for work completed, or an examination. The curriculum embraces four years of six months each. Fees: First year, $55; second, $50; third, $40, and $65 for the fourth year. The Secretary is Dr. T. E. Potter, St. Joseph. Total enrolment for 1900-1 was 57; graduates, 2. The seventh session began September 2, and will end March 1, 1902.

NEBRASKA.

Nebraska, population 1,066,300, has three medical colleges: Omaha Medical College, Lincoln Medical College, and John A. Creighton Medical College.

Omaha.

Omaha Medical College.—This is the Medical Department of the University of Nebraska ar [illegible] 881. It is situated in Omaha, a city with a [illegible] and its faculty is composed of 24 professors [illegible] s and lecturers, and 3 assistants, a total of 36. The Douglas County Hospital, accommodating 300 patients; Bishop Clarkson Memorial Hospital, Immanuel Hospital, the Omaha Methodist Hospital and the college dispensary furnish good material for clinical study and demonstration. This college is a member of the Association of American Medical Colleges and its requirements for admission are governed by that organization. The college building is well adapted for its purpose and the laboratories and lecture rooms are commodious and completely equipped. The course of work embraces graded studies covering four years of seven months each. The method of instruction is made up of didactic and clinical lectures, demonstrations, quizzes and laboratory work. The total fees for the first two years is $80 each, and $85 for each of the last two years. Board and lodging can be obtained for from $3 to $5 a week. The Secretary is Dr. Ewing Brown, Omaha. Total number of students registered in 1900-1 was 149; graduates, 23. The twenty-first session begins September 24, 1901, and will end April, 1902.

John A. Creighton Medical College.—This school was organized in 1892, and is also situated in Omaha. It is the Medical Department of Creighton University, and has a faculty of 27 professors, 8 associates and lecturers, and 7 assistants, a total of 42. The clinical facilities are those of St. Joseph's Hospital, containing 300 beds and having a clinical amphitheater connected with it; St. Bernard's Hospital, with 160 beds; Douglas County Hospital, Presbyterian Hospital, and the college dispensary; the material is abundant and varied. The requirements for admission are those of the Association of American Medical Colleges, of which organization this school is a member. [illegible] s completed in 1898, contains excellent [illegible] nd lecture-room work, and the equipment [illegible] of instruction, including clinical, didactic and laboratory work, special emphasis is laid upon practical work. The course of study embraces four years of eight months each. The total fees for the first two years is $80 each, and $85 for the last two years. The Dean is Dr. D. Bryant, McCague Bldg., Omaha. Total number of students registered in 1900-1 was 123; graduates, 27. The ninth session opens September 15, 1901, and closes April 15, 1902.

Lincoln.

Lincoln Medical College.—Eclectic. This school was organized in 1889, and is situated in Lincoln, a city of 40,169 people. It has a faculty of 23 professors and 2 lecturers. The college dispensary furnishes clinical material. The requirements for admission are those of the National Confederation of Eclectic Medical Colleges, of which this college is a member. The course of study covers four years of twenty-eight weeks each. The total fees for the first year is $83; second, $78; third, $70, and $65 for the fourth year. The Dean is Dr. W. S. Latta, Lincoln. Total number of students for 1900-1 was 74; graduates, 12. The present session began September 15, 1901, and ends April, 1902.

NEW HAMPSHIRE.

New Hampshire, population 411,588, contains *one* medical college.

College.—This school is the Medical De- College, and is located in Hanover, popula- was organized in 1797. Its faculty is made up of 14 professors and 3 demonstrators, 17 in all. The Mary Hitchcock Memorial Hospital, a college hospital of 36 beds, supplies the clinical material. Applicants for admission must possess an education at least equivalent to graduation from a registered high school. The laboratories of the academic department afford good facilities for work in physics, biology and chemistry. The course covers four years of twenty-six weeks each. Total fees for the first three years are $110, and $135 for the fourth year. The Dean is Dr. William T. Smith. The total number of students registered for 1900-1 was 89; graduates, 27. The work for the entering class begins with that of the academic department, commencing in September and closing in June; for the advanced classes it begins in July and ends in February.

NEW YORK.

New York State, population 7,268,894, has ten medical colleges. Seven of these, College of Physicians and Surgeons, Long Island College Hospital, New York Homeopathic Medical College, New York Medical College, Eclectic Medical College, Cornell University Medical College and the University and Bellevue Hospital Medical College are located in New York City, population 3,437,202. This city, with its hospitals and dispensaries, offers abundant clinical material. Board and lodging can be obtained for from $5 to $7 a week.

Albany Medical College is located in Albany, a city of 94,151 people, where board and room can be had for from $4 to $5 a week.

The University of Buffalo Medical Department is situated in Buffalo, population 352,387; here board and lodging can be obtained for from $3.50 to $5 per week.

The College of Medicine, Syracuse University, is in Syracuse, a city with 108,374 inhabitants. Board and lodging can be procured for from $3.50 a week upwards.

The laws of the state of New York require of the prospective student of medicine a preliminary education equivalent to that obtainable in a four years' course in any of the public high schools recognized by the regents as maintaining a satisfactory standard. Upon proof of at least this amount of education, a medical-student certificate will be issued by the state authorities. The colleges, therefore, have a common standard for the requirements of admission.

New York City.

College of Physicians and Surgeons.—This school was organized in 1807 and its present relation, that of medical department of Columbia University, was assumed in 1860. The faculty embraces 21 professors, 18 clinical and adjunct professors and 43 demonstrators, instructors, etc., a total of 82. The new Vanderbilt Clinic, where 48,967 patients were treated during the year 1900 and which is equipped with all modern appliances for the study and treatment of disease, and Sloane Maternity Hospital, containing 116 beds, offer exclusive clinical advantages to students of this school. Besides these, Roosevelt Hospital, containing 238 beds; New York Hospital, with 150 beds; Bellevue, 850 beds; Presbyterian, 330 beds; St. Luke's, General Memorial, and New York Foundling Hospitals, together with the Eye and Ear Institute, containing 40 beds, St. Mary's Free Hospital for Children, and the Hospital for the Ruptured and Crippled, all offer free clinical teaching to matriculants of this school. The laboratories, lecture rooms and amphitheaters are ample in equipment and accommodation; special provisions are made to equip each student thoroughly in each of the laboratories and thus make the work individual. The work is graded, covering four years of eight months each. The total fees for the first year are $205; for the second and third, $200 each, and $225 for the fourth year. The Dean is Dr. James W. McLane, New York City. Total registration for 1900-1 was 801; graduates, 149. The next session begins Oct. 7, 1901, and ends June 11, 1902.

Long Island College Hospital.—This was organized in 1856, and has a faculty of 11 professors, 13 adjunct and clinical professors and 45 lecturers, instructors, etc., a total of 69. Long Island College Hospital, containing 300 beds and being connected with a four-story maternity hospital; Polhemus Memorial Clinic, and Hoagland Laboratory, com most modern apparatus, are all a part o nical facilities furnished by these, n d at Kings County, St. John's, Brookl Methodist Episcopal and the Brookly re the students are offered opportun y of these also contain out-patient advanced students to attend personally to cases. Bedside instruction is also given in the wards. The course covers four years of thirty weeks each. Fees: First year, $190; second, $195; third, $160, and $145 for the fourth year. The Dean is Dr. Jarvis S. Wight, New York City. Total registration, 1900-1, was 187; graduates, 47. The forty-third session opens Oct. 1, 1901, and closes May 15, 1902.

New York Homeopathic Medical College and Hospital.—Homeopathic. This school was organized in 1858 and has a faculty of 27 professors and 21 lecturers, instructors, etc., 48 in all. Flower Hospital, adjoining the college and having a completely equipped out-patient department, Metropolitan Hospital, New York Ophthalmic Hospital and the Laura Franklin Free Hospital for Children furnish the clinical facilities. The course covers four years of seven months each. Total fees for the first year, $110; second, $130 third, $125, and $155 for the fourth year. The Dean is Dr. Wm. T. Helmuth, 504 Fifth Ave., New York. Total number of students registered for 1900-1 was 107; graduates, 127. The next session begins Oct. 2, 1901, and ends May 8, 1902.

New York Medical College and Hospital for Women.—Homeopathic. This school was organized in 1863, and has a faculty of 19 professors, 5 adjuncts and 19 lecturers and assistants, a total of 43. The college hospital and dispensary, the Memorial Hospital for Women, Metropolitan, Flower and the Laura Franklin Free Hospital for Children afford clinical material. The course covers four years of thirty weeks each. Fees: First year, $125; second, $110; third, $100, and $130 for the fourth year. The Dean is Dr. M. Belle Brown, 30 W. 51st St., New York. Total registration for 1900-1 was 33; graduates, 9. The next session opens Oct. 1, 1901, and closes May 14, 1902.

Eclectic Medical College.—This was organized in 1865 and has a faculty of 12 professors and 23 lecturers, demonstrators, etc., 35 in all. A college dispensary, Manhattan and Red Cross Hospitals and Muncie Sanatorium supply clinical facilities. The work covers four years of seven months each. Total fees: First year, $125; second, $120; third, $105, and $130 for the fourth year. The Dean is Dr. George W. Boskowitz, New York. Total registration for 1900-1 was 84; graduates, 12. The next session opens Sept. 24, 1901, and closes May, 1902. This school is a member of the National Confederation of Eclectic Medical Colleges.

Cornell University Medical College.—This department of Cornell University was established in 1898. The faculty is composed of 12 professors, 19 clinical professors, 31 instructors, and 36 clinical instructors and assistants, a total of 98. The City Hospital, having 1000 beds; Bellevue Hospital, New York Hospital, Presbyterian, Willard Parker and Reception, with 200 beds; New York Skin and Cancer; St. Francis, having a capacity of 230 beds; St. Vincent's, with 200 beds; the Manhattan Eye and Ear Hospital, and the Eye and Ear Infirmary, in addition to a large college dispensary, furnish the clinical resources; the material is abundant and varied. The first two years of the course are taken at Ithaca and the work is devoted to the fundamental scientific subjects. The last two years are spent mostly in practical and clinical work and the hospital advantages are utilized. The Loomis Laboratory, a five-story modern building, is well equipped and supplies ample practical laboratory facilities required in the advanced work. "The essential feature of the entire system is the division of the classes of the several years into small sections." Fees: First year, $190; second and third, $180 each, and $200 for the fourth year. The Dean is Dr. William M. Polk, New York. Total registration for 1900-1 was 356; graduates, 26. The next session opens Sept. 24, 1901, and closes June 19, 1902.

University and Bellevue Hospital Medical College.—This is a department of the New York University, and was founded in 1898 by the union of the New York University Medical College, organized in 1841, and the Bellevue Hospital Medical College, organized in 1861. The faculty is composed of 30 professors, 33 clinical professors and lecturers, and 50 instructors, demonstrators, etc., in all 113. Bellevue and City Hospitals, Hospitals of the Workhouse and Almshouse, Manhattan State Hospital for the Insane, Willard, Parker and Reception Hospitals, Riverside Hospital for Contagious Diseases, Randall's Island, Presbyterian, St. Luke's, St. Vincent's, General Memorial, Gouverneur, Columbus, Harlem, New York Foundling, and the Society for the Lying-in Hospitals, the New York Eye and Ear Infirmary, and a large college dispensary are open to students of this school for a study of clinical cases. The Carnegie building, a new five-story structure adjoining the college, is devoted to laboratory instruction and investigation, and, with the other two large college buildings, affords good laboratory and lecture room facilities. The course of instruction covers four years of seven months each. Actual clinical teaching, in conjunction with and founded upon laboratory work, recitation and didactic teaching, is emphasized to the greatest possible degree. Fees: First year, $185; second and third, $180 each, and $195 for the fourth year. The Dean is Dr. Edward G. Janeway, New York City. Total registration for 1900-1 was 285; graduates, 43. The next session opens Oct. 2, 1901, and closes June 5, 1902.

Albany.

Albany Medical College.—This school was organized in 1838, and in 1873 it assumed its present relations, as medical department of Union University. The faculty is composed of 13 professors, 10 adjunct and clinical professors, and 32 lecturers, instructors and assistants, a total of 55. Albany, St. Peter's, Child's and County Hospitals, South End Dispensary, Eye and Ear Infirmary and the Albany Hospital for Incurables, also the free dispensaries connected with each, are open to students for clinical study. The curriculum embraces graded work for four years of six months each. Teaching is carried on in the laboratories, clinics and lecture rooms. Examinations are held twice a year in all subjects. Fees: First year, $135; second, $120; third, $110, and $130 for the fourth year. The Dean is Dr. Albert Vander Veer, Albany.

Total registration for 1900-1 was 142; graduates, 28. The next session opens Sept. 24, 1901, and closes March 6, 1902.

Buffalo.

University of Buffalo Medical Department.—This was organized in 1846 and has a faculty made up of 26 professors, 27 adjunct and clinical professors, and 15 lecturers, etc., a total of 68. Buffalo General Hospital, Hospital of the Sisters of Charity, Erie County and German Hospitals and the German Deaconess' Home supply ample clinical material for study. A college dispensary, recently organized, is also of value in practical work. The buildings and hospitals are well equipped for clinical and laboratory work. *Bedside instruction is insisted upon and the senior students* are permitted to assist in operations and give anesthetics. This school is a member of the Association of American Medical Colleges. The course covers four years of seven months each. The total fees are: First year, $455; second, $55, and $15 each for the third and fourth years. The Dean is Dr. Matthew D. Mann, 37 Allen St., Buffalo. Total registration for 1900-1 was 212; graduates, 46. The fifty-sixth session opens Sept. 30, 1901, and closes May 2, 1902.

Syracuse.

College of Medicine, Syracuse University.—This school was organized in 1872, as the medical department of Syracuse University. The faculty is composed of 16 professors and 25 lecturers, instructors, etc., in all 41. Clinical facilities are furnished by St. Joseph's Hospital, with a capacity for 200 patients; Hospital of the House of the Good Shepherd, Syracuse Hospital for Women and Children, Onondaga County Orphan Asylum, and the Syracuse Free Dispensary. The laboratories and amphitheaters are large and well equipped. This school is a member of the Association of American Medical Colleges. The curriculum embraces a four years' graded course, eight months making a school year. The total fees for each of the four years are $125. The Dean is Dr. Henry D. Didama, 424 S. Salina St., Syracuse. Total number of students registered for 1900-1 was 116; graduates, 19. The next session opens Oct. 1, 1901, and closes June 11, 1902.

NORTH CAROLINA.

North Carolina, population 1,893,810, has three medical schools. They are, Leonard School of Medicine, North Carolina Medical College, and the University of North Carolina Medical Department. The latter school does not confer degrees.

Leonard School of Medicine.—This school was established in 1882 by the American Baptist Home Mission Society, for the purpose of training colored students of medicine. It is located in Raleigh, a city of 13,643, and has a faculty of 8 teachers. A free hospital and dispensary supplies clinical material. A preliminary entrance examination is given to applicants not possessing a certificate or diploma of educational requirements. The course covers four years of six months each. The total fees for each year are $75. The dormitory plan is adopted generally, and board and room costs $2 a week. The Dean is Dr. James McKee, Raleigh. Total enrolment for 1900-1 was 98; graduates, 18. Next session opens Sept. 28, 1901, and closes March 15, 1902.

North Carolina Medical College.—This school was organized in 1893 and has a faculty of 6 teachers. It is located at Davidson, a village of 904 people, and a small hospital supplies the clinical facilities. The course covers but three years of eight months each. The requirements for admission claimed are those established by the Association of American Medical Colleges. Fees: First year, $90; second year, $85, and $100 for the third year. The President is Dr. J. P. Monroe, of Davidson. The present session began Sept. 5, 1901, and closes May 12, 1902.

University of North Carolina Medical Department.—This is a school not conferring degrees, but embracing the first two years of medical instruction covered in that time by the better class of medical colleges. It was organized in 1891. It is a member of the Association of American Medical Colleges, and its certificate of work completed is accepted by all colleges that are members of that association.

OHIO.

Ohio, population 4,157,545, has twelve medical colleges. Six of these, the Medical College of Ohio, Eclectic Medical Institute, Miami Medical College, Cincinnati College of Medicine and Surgery, Pulte Medical College and the Laura Memorial Woman's Medical College, are located in Cincinnati, a city of 325,902 inhabitants. The clinical advantages of Cincinnati are good; besides many smaller hospitals, the Cincinnati Hospital, where 4940 patients were treated in 1900, is open to the students for study. Board can be procured in Cincinati for from $3 to $5 per week.

Cleveland, population 381,768, contains three medical schools: Western Reserve University Medical College, Cleveland College of Physicians and Surgeons and the Cleveland Homeopathic Medical College. The City Hospital, with 275 beds, is used in common by them for clinical study. Board and lodging can be had for from $2.50 to $5 a week.

Columbus, population 125,560, contains two: Starling Medical College and Ohio Medical University. Board and lodging cost from $2.50 to $5 per week.

Toledo, with 131,822 people, has one medical school: Toledo College of Medicine. It has good clinical advantages. Board and room can be had for from $3 to $5 per week.

The laws of Ohio require that in order to practice medicine in this state, any student not possessing a diploma or certificate showing that he is possessed of the educational advantages required, must pass a satisfactory examination, under the direction of the State Board of Medical Registration and Examination, in the following subjects: English, including rhetoric and spelling; geography, arithmetic, algebra, physics, botany, United States history, and Latin equal to a year's work. This is the standard adopted by all the medical colleges in the state.

Cincinnati.

Medical College of Ohio.—This is the Medical Department of the University of Cincinnati, organized in 1819, and has a faculty made up of 19 professors, 22 lecturers, demonstrators, etc., a total of 41. Good Samaritan Hospital, with 400 beds, Cincinnati Hospital and a well-equipped college dispensary furnish clinical facilities. The buildings supply ample laboratory and lecture-room space, and their equipment is good. The course of study is graded and covers four years of seven months each. This school is a member of the Association of American Medical Colleges. The total fees are for the first year, $105; for the second and third, $100 each, and $125 for the fourth year. Total registration of students for 1900 was 200, graduates 60. The Dean is Dr. P. S. Conner, Cincinnati. The eighty-third session begins Oct. 2, 1901, and ends May, 1902.

Eclectic Medical Institute.—Eclectic. This school was organized in 1845, and has a faculty of 29 members. The Seton Hospital, Cincinnati Hospital, and a college dispensary furnish clinical material. It is a member of the National Confederation of Eclectic Medical Colleges. The course covers four years of twenty-eight weeks each. The fees are $75 for each year, with a graduation fee of $25. The Dean is Dr. F. J. Locke, Newport, Ky. Total enrolment 1900-1, was 141, graduates 26. The next session begins Sept. 23, 1901, and closes April 15, 1902.

Miami Medical College.—This school was organized in 1852 and has a faculty of 18 professors and 16 lecturers and demonstrators, a total of 34. The clinical facilities are furnished by the Cincinnati Hospital and a college dispensary. This college is a member of the Association of American Medical Colleges. The curriculum embraces a four-year graded course of seven months each. The total fees are, for the first year, $115; for the second and third, $110, and $130 for the fourth year. The Secretary is Dr. Oliver P. Holt, 134 W. Ninth St., Cincinnati. Total registration for 1900-1 was 112; graduates, 25. The next session opens Oct. 1, 1901, and closes May, 1902.

Cincinnati College of Medicine and Surgery.—This school was organized in 1852, and has a faculty of 21 professors and 16 lecturers, demonstrators, etc., 37 in all. St. Mary's, Cincinnati, the Jewish, and Christ's Hospitals supply material for clinical study. This school is a member of the Association of American Medical Colleges. The work covers four years of seven months each, and is graded. The total fees for the first three years are $75 each, and $100 for the fourth year. The Dean is Dr. F. V. Fitzpatrick, 32 Garfield Place, Cincinnati. Total enrolment for 1900-1 was 82, graduates 16. The next session opens Sept. 26, 1901, and closes May, 1902.

Pulte Medical College.—Homeopathic. This was organized in 1872 and [illegible] f 22 professors and 9 assistants, 31 in all. [illegible] thesda Hospital, and a college dispensary [illegible] The curriculum covers four years of seven months each. Fees: First year, $80; for the second and third, $75 each, and $100 for the fourth. The Dean is Dr. J. D. Buck, Cincinnati. Total enrolment for 1900-1 was 39, graduates 5. The next session opens Oct. 2, 1901, and closes May 6, 1902.

Laura Memorial Woman's Medical College.—This school was formed in 1895 and has a faculty of 19 professors and 7 assistants, in all 26. Presbyterian and Cincinnati Hospitals and a college dispensary supply material for clinical study; the out-patient department of Presbyterian Hospital is open to students of this school exclusively. This college is a member of the Association of American Medical Colleges. The course embraces four years' study of seven months each. The total fees are $50 for each year. The Dean is Dr. John M. Winthrow, Cincinnati. Total registration of students for 1900-1 was 24, graduates 5. The next session opens Sept. 26, 1901, and closes May 1, 1902.

Cleveland.

Western Reserve University Medical College.—This department of Western Reserve University was organized in 1843. Its teaching faculty includes 19 professors, 17 lecturers and demonstrators, and 20 assistants, a total of 56. The clinical facilities are offered students of the school by Lakeside Hospital, having 250 beds; St. Vincent's Hospital, with 75 beds; City Hospital, containing 150 beds; Home of Maternity, and a college dispensary. The buildings afford ample laboratory and lecture-room space, and the equipment is good; a new clinical laboratory has recently been added. This college is a member of the Association of American Medical Colleges. The curriculum embraces four years' work, of eight months each. The total fees are $125 for each year. The Dean is Dr. Benjamin L. Millikin, 278 Prospect St., Cleveland. Total enrolment for 1900-1 was 133, graduates 24. The next session begins Oct. 2, 1901, and ends June 12, 1902.

Cleveland College of Physicians and Surgeons.—This school was organized in 1863, but did not assume its present name and become the Medical Department of Ohio Wesleyan University until 1896. The faculty is composed of 25 professors and 22 associates, lecturers, etc., 47 in all. Cleveland General Hospital, City Hospital, St. Alexis and St. John's Hospitals, and a college dispensary are available for clinical study. Beginning Sept. 18, 1901, the work was made continuous, the calendar year being divided into three terms of four months each; the work of two terms constitutes the maximum amount of credit that can be obtained in a collegiate year, four years being necessary for graduation. This school is a member of the Association of American Medical Colleges. The total fees for the first two years are $130 each, and $110 for the last two years. The Dean is Dr. C. B. Parker, 425 Euclid Ave., Cleveland. Total enrolment for 1900-1 was 78, graduates 15. The present term began Sept. 18, 1901.

CLEVELAND HOMEOPATHIC MEDICAL COLLEGE.—Homeopathic. This school was founded in 1890 by a consolidation of Cleveland University of Medicine and Cleveland Medical College. The faculty includes 29 professors and 16 adjuncts, lecturers, etc., 45 in all. The clinical facilities are obtained from the Cleveland Homeopathic Hospital, and a college dispensary. The course embraces four years of thirty weeks each. Fees: First year, $110; second and third years, $105 each, and $125 for the fourth year. The Dean is Dr. Gaius J. Jones, Cleveland. Total number of students registered 1900-1 was 150, graduates 46. The present session opened Sept. 18, 1901, and closes April 9, 1902.

Columbus.

STARLING MEDICAL COLLEGE.—This school was organized in 1847 and has a faculty composed of 13 professors and 16 lecturers, associates, etc., a total of 29. St. Francis Hospital, which is under the control of this faculty, Hawke's Hospital, of Mt. Carmel, and a college dispensary are available for clinical study. This college is a member of the Association of American Medical Colleges. The laboratory and lecture-room space is ample. The work covers four years of seven months each. Fees: First year, $73; second, $71; third, $60, and $80 for the fourth year. The Dean is Dr. Starling Loving, Columbus. Total enrolment for 1900-1 was 173, graduates 32. The present session opened Sept. 11, 1901, and closes April 10, 1902.

OHIO MEDICAL UNIVERSITY.—This school was organized in 1890 and has a faculty of 26 professors and 5 assistants, 31 in all. The Protestant Hospital, Ohio Penitentiary Hospital, and a college dispensary provide material for clinical work. The amphitheaters and laboratories are well equipped. This school is a member of the Association of American Medical Colleges. The course embraces work over four years of seven months each. Fees: First year, $86; second, $79; third, $51, and $61 for the fourth year. The Dean is Dr. George M. Waters, Columbus. Total number of students enrolled for 1900-1 was 228, graduates 45. The present session began Sept. 11, 1901, and ends April 15, 1902.

Toledo.

TOLEDO MEDICAL COLLEGE.—This school was organized in 1882 and has a faculty made up of 18 professors and 16 lecturers and assistants, in all 34. Toledo Hospital, St. Vincent's and Robinwood Hospitals, Lucas County Infirmary Hospital, Toledo State Hospital for the Insane and a free dispensary supply good clinical facilities. This college is a member of the Association of American Medical Colleges. The curriculum embraces four years of seven months each. The fees are $75 for each year with a matriculation fee of $5, payable once. The Secretary is Dr. Park L. Myers, 1921 Franklin Ave., Toledo. Total enrolment for 1900-1 was 55, graduates 8. The next session opens Sept. 26, 1901, and closes April 24, 1902.

OREGON.

Oregon, population 413,536, has two medical colleges: Medical Department Willamette University, and University of Oregon, Medical Department.

MEDICAL DEPARTMENT WILLAMETTE UNIVERSITY.—This school is situated in Salem, a town of 4,258 people, and was organized in 1864. The faculty consists of 17 teachers. Clinical facilities for study are supplied by Salem Hospital, and a college dispensary. This school is a member of the Association of American Medical Colleges. The course embraces four years' work of six months. Fees: First year, $110; second, $100; third, $75; and $50 for the fourth year. Board and lodging costs from $3 to $5 a week. The Dean is Dr. W. H. Byrd, Salem. Total enrolment for 1900-1 was 27, graduates 5. The next session begins Oct. 2, 1901, and ends April 2, 1902.

UNIVERSITY OF OREGON MEDICAL DEPARTMENT.—This department of the State University was organized in 1887 and has a faculty of 15 professors and 11 special lecturers, a total of 26. It is situated in Portland, population 90,426. Good Samaritan and St. Vincent's Hospitals, containing 200 and 350 beds respectively, furnish good material for clinical study. The requirements for admission are those of the Association of American Medical Colleges. The college building is modern and well equipped, presenting ample teaching facilities. The course is four years of six months each. Fees: First year, $142.50; for the second and third, $137.50 each, and for the fourth the only fee is $7.50 for examination fee. Board and room can be obtained for from $4 to $6 a week. The Dean is Dr. Simeon E. Josephi, Portland. Total number of students for 1900-1 was 64, graduates 11. The next session opens Oct. 1, 1901, and closes April, 1901.

PENNSYLVANIA.

Pennsylvania, population 6,302,115, has six medical colleges. Of these Philadelphia, having a population of 1,293,697, contains five, as follows: University of Pennsylvania Department of Medicine, Jefferson Medical College, Hahnemann Medical College, Woman's Medical College of Pennsylvania, and the Medico-Chirurgical College of Philadelphia. The clinical facilities of Philadelphia present abundant and varied material for study. Besides the individual hospitals connected with each of the schools the charity hospitals are open to all the students in common. Board and lodging cost from $4 a week upwards.

The other school, Western Pennsylvania Medical College, is situated in Pittsburg, a city of 321,616 people. The cost of board and lodging is from $4 to $6 a week.

A preliminary examination is required of all applicants for a license to practice medicine or surgery in the state. This examination is held at stated intervals by the State Examiners, and includes: (a) English composition, grammar and rhetoric; (b) mathematics, covering algebra and plane geometry; (c) elementary physics, and (d) United States history, and (e) Latin equivalent to a year's study. Upon passing a successful examination a medical-student certificate is issued to the applicant. This certificate will admit the possessor to matriculation in any medical college in the state.

Philadelphia.

UNIVERSITY OF PENNSYLVANIA MEDICAL DEPARTMENT.—This is the oldest medical college in this country, having been organized in 1765 as the medical department of the College of Philadelphia; the first degree was granted in 1768. When the University of Pennsylvania was organized, in 1782, it became the medical department of the University, its present relation. The faculty is made up of 19 professors, 7 clinical professors, and 77 assistants, lecturers, etc., a total of 103. Abundant and varied clinical material is furnished by the University Hospital, where during 1899 there were 9215 cases treated; Maternity Pavilion, with 50 beds; Philadelphia Hospital, containing 1000 beds; Pennsylvania, Children's and German Hospitals, and the Southeastern Hospital and Dispensary. Special attention is paid to bedside instruction and to thoroughly practical work. Applicants for admission must furnish evidence of the education required to enter the academic department of the University. The buildings known as Medical Hall, Laboratory Hall and the Laboratory of Hygiene supply excellent laboratory and lecture room facilities and they are well equipped. The course embraces study for four years of eight months each. The total fees for each year are $200 each, with a matriculation fee of $5 for the first year. The Dean is Dr. John Marshall, Philadelphia. Total enrolment for 1900-1 was 565; graduates, 160. The next session opens October 2, 1901, and closes June, 1902.

JEFFERSON MEDICAL COLLEGE.—This school was organized in 1826, and has a faculty of 15 professors, 11 clinical and adjunct professors, and 58 lecturers [illegible] total of 84. Jefferson Hospital, together [illegible] partment, are used exclusively by students [illegible] study. Bedside instruction is given daily to small sections of the senior class. In addition the following hospitals are open for study of clinical cases: Pennsylvania [illegible] seph's, German, Municipal and Will's Eye [illegible] ge is a member of the Association of Ameri [illegible] and applicants for admission must conform to the regulations of that association. The course of study covers graded work for four years of eight months each. The laboratories are large and well equipped, a new five-story laboratory building having recently been added; the lecture rooms and amphitheaters are also ample. The tuition is $150 a year, with a matriculation fee of $5, paid but once. The Dean is Dr. James W. Holland, Philadelphia. The total number of students for 1900-1 was 736; graduates, 106. The next session opens October 1, 1901, and closes May 29, 1902.

HAHNEMANN MEDICAL COLLEGE AND HOSPITAL.—Homeopathic. This was organized in 1848 and has a faculty of 15 professors and 42 lecturers, instructors, etc., in all 57. Hahnemann College Hospital and Pennsylvania Hospital furnish material for clinical work. The requirements for admission are those established by the Intercollegiate Committee of the American Institute of Homeopathy. The work covers four years of thirty weeks each. Fees: First year, $105; second and third, $125 each, and $155 for the fourth year. Total number of students for 1900-1 was 264; graduates, 52. The Dean is Dr. Pemberton Dudley, Philadelphia. The next session begins September 30, 1901, and will end May 15, 1902.

WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA.—This school was organized in 1850, and has a faculty of 11 professors, 19 clinical and assistant professors, and 23 lecturers, etc., in all 53. Clinical facilities are offered exclusively to this college by the Woman's Hospital, West Philadelphia Hospital for Women. Other clinical advantages offered are those of the Pennsylvania, German, Children's and Philadelphia hospitals, Will's Hospital for Diseases of the Eye and the Philadelphia Lying-in Charity. This school is a member of the Association of American Medical Colleges, and the requirements for admission are those established by the organization. The lecture room and laboratory equipment is good. The curriculum covers four years of eight months each. Fees: First year, $141.50; second, $138.50; third, $135.50, and $100.50 for the fourth year. The Secretary is Dr. C. N. Pierce, Philadelphia. Total enrolment for 1900-1 was 175; graduates, 37. The fifty-second session begins September 26, and will end May 22, 1902.

MEDICO-CHIRURGICAL COLLEGE OF PHILADELPHIA.—This school was organized in 1881 and has a faculty made up of 19 professors, 10 clinical and associate professors, and 43 lecturers, demonstrators, etc., 72 in all. Opportunities for clinical study are offered exclusively to students of this school by the Medico-Chirurgical Hospital, with 130 beds; Chilren's Hospital, containing 40 beds, and a maternity hospital having 40 beds. In common with other schools the following are used: Philadelphia, Pennsylvania, German, Samaritan, St. Joseph's, St. Agnes', St. Mary's, Methodist and the Philadelphia Lying-in Hospitals. Applicants for matriculation must follow the rules of the Association of American Medical Colleges, to which this school belongs. With laboratories, lecture rooms and amphitheater this college is amply provided and the equipment is good. The work embraces four years of eight months each. Fees: First two years, $140 each; third year, $130, and $100 for the fourth year. The Dean is Dr. Seneca Egbert, 4814 Springfield Ave., Philadelphia. Total enrolment for 1900-1 was 408; graduates, 67. The next session opens October 1, and will close May 24, 1902.

Pittsburg.

WESTERN PENNSYLVANIA MEDICAL [illegible] cal Department of the Western [illegible] Medi- was organized in 1886. The facu [illegible] and [illegible] professors, and 30 associates, assistants, etc., 68 in all. Clinical material for study is furnished by a college dispensary, and the Emma Kaufman Clinic, Reineman Maternity Hospital, Mercy, South Side and

St. John's hospitals. This school is a member of the Association of American Medical Colleges and matriculants must be possessed of acquirement prescribed by that organization. Well-equipped laboratories provide ample facilities for individual work; the lecture-room space is sufficient. The course of study embraces graded work for four years of eight months each. Special attention is given to practical bedside work. The total fees are $130 for each year. The Dean is Dr. J. C. Lange, Pittsburg. Total enrolment for 1900-1 was 338; graduates, 73. The next session begins October 1, and will close Mav 29, 1902.

SOUTH CAROLINA.

South Carolina, population 1,340,316, has one medical college,

The Medical College of South Carolina.—This is situated in Charleston, a city of 55,807 people, and was founded as the Medical College of South Carolina in 1823; ten years later it was reorganized under its present title. The faculty is made up of 10 professors and 14 adjuncts, assistants, etc., 24 in all. The clinical facilities are those offered by the City Hospital, where surgical, obstetrical and medical instruction is given. Applicants for matriculation must show by certificate or examination that they possess the education required of second-grade teachers in the public schools. The course covers four years of six months each. The total fees for each of the first two years are $100, and $75 each for the last two. Board and room can be obtained for from $12 to $16 a month. The Dean is Dr. Francis L. Parker, Charleston. Total enrolment for 1900-1 was 95: graduates, 35. The next session opens October 1, 1901, and closes April, 1902.

TENNESSEE.

Tennessee, population 2,020,616, has ten medical colleges. Of these the Medical Department of the University of Nashville, Vanderbilt University Medical Department, University of Tennessee Medical Department, and Meharry Medical College are situated in Nashville, a city with a population of 80,865. The City Hospital, containing 100 beds, is used by all the schools in common for clinical study. Board and lodging cost from $3 to $4 a week. Knoxville, population 32,637, contains two colleges, Tennessee Medical College and Knoxville Medical College. The cost of room and board in that city is from $2.50 to $4 a week. Chattanooga Medical College and Chattanooga National Medical College are situated in Chattanooga, a city of 30,154 people. Board and lodging cost there from $1.50 a week upwards. There is one college, Memphis Hospital Medical College, located in the growing city of Memphis, population 102,320. Good board can be obtained for from $3 to $4 a week. The other school, the Sewanee Medical College, is located at Sewanee, a mountain town of 1200 people.

Nashville.

Medical Department University of Nashville.—This school was established in 1850, and has a faculty of 14 professors, and 13 lecturers, assistants, etc., in all 27. This school is a member of the Southern Medical College Association and the requirements for admission prescribed by that organization are enforced. The course of study covers four years of twenty-six weeks each. The total fees for each of the four years are $65. The Dean is Dr. William G. Ewing, Nashville. Total enrolment for 1900-1 was 182; graduates, 66. The next session begins October 1, 1901, and ends April 2 1902.

Vanderbilt University Medical Department.—This school was founded in 1874, and in 1895, when the present medical building was completed, the course was extended, the standard raised, and the present faculty. consisting of 10 professors and 20 associates, lecturers, etc., appointed. The [illegible] admission are those of the Southern Medical [illegible] of which this school is a member. The course [illegible] six months each. The total fees for the first three years are $105 each, and $130 for the fourth year. The Dean is Dr. William L. Dudley, Nashville. Total enrolment for 1900-1 was 211; graduates, 92. The next session begins October 1, 1901, and ends April 3, 1902.

University of Tennessee Medical Department.—This was organized in 1876 as the Nashville Medical College; its present relations, as Medical Department of the University of Tennessee, were assumed in 1879. The faculty is composed of 14 professors, and 13 lecturers, assistants, etc., 27 in all. The requirements for admission are those of the Southern Medical College Association, of which this school is a member. The course of study includes work for four years of six months each. The total fees for each of the first two years are $100; third year, $90, and $115 for the fourth year. The Dean is Dr. Paul F. Eve, 614 Broad St., Nashville. Total enrolment for 1900-1 was 182; graduates, 75. The next session begins October 1, 1901, and ends April, 1902.

Meharry Medical College of Walden University.—Colored. This school was organized in 1876 as the Medical Department of Central Tennessee College, now Walden University, "for the purpose of furnishing to the colored people of the South an opportunity obtaining a medical education." The faculty is made up of 9 professors, and 11 instructors, demonstrators, etc., 20 in all. This school is a member of the Association of American Medical Colleges, and the requirements for admission are those prescribed by that Association. The work embraces a four-year graded course, six months to the year. The total fees for the first three years are $40 each, and $50 for the fourth year. The Dean is Dr. G. W. Hubbard, Nashville. Total registration for 1900-1 was 217; graduates, 39. The twenty-fifth session begins September 21.

Knoxville.

Tennessee Medical College.—This school was organized in 1889, and has a faculty of 13 professors and 6 assistants, 19 in all. A college hospital and a free dispensary supply material for a study of clinical cases. This school is a member of the Southern Medical College Association, and the requirements for admission are those prescribed by that Association. The curriculum includes graded work for four years of six months each. Fees: First year, $75; second, $70; third, $67.50, and $94 for the fourth year. The Secretary is Dr. Henry J. Kelso, Knoxville. Total number of students for 1900-1 was 97; graduates, 35. The thirteenth session begins October 1, 1901, and closes April 1, 1902.

Knoxville Medical College.—Colored. This school was established in 1900 following the discontinuance of the Medical Department of Knoxville College, organized in 1895. The teaching force comprises 11 professors. The City Hospital and a college dispensary supply clinical material. Applicants for admission not possessing a certificate of the necessary educational requirements "must pass a satisfactory examination." The catalogue says that the course covers four years of six months each. Fees: First year, $42; second, $37; third, $30, and $40 for the fourth year. The Dean is Dr. E. L. Randall, Knoxville. Total number of students for 1900-1 was 34; graduates, 4. The next session opens December 4, 1901, and closes May 30, 1902.

Chattanooga.

Chattanooga Medical College.—This is the Medical Department of Grant University and was organized in 1889. The faculty is made up of 12 professors, and 22 demonstrators, instructors, etc., in all 34. Erlanger Hospital and a free college dispensary supply material for a clinical study of cases. The catalogue says that before an applicant for graduation can matriculate he must present a certificate showing that he is possessed of scholastic attainments equal to those required for a first-grade teacher in the public schools. The course of work covers four years of six months each and is graded. The total fees for the first, third and fourth years are $75 each, and $85 for the second year. The Dean is Dr. E. A. Cobleigh, Chattanooga. Total enrolment for 1900-1 was 224; graduates, 54. The thirteenth session begins October 7, 1901, and ends April 15, 1902.

Chattanooga National Medical College.—Colored. This was chartered in 1899 and shows a teaching force of 9. "The college has a large lecture room, two recitation rooms, one dissecting and a large pharmaceutical room." The catalogue claims that the course covers four years of seven months each. Total fees are $50 each year, with an additional graduation fee of $20. Total enrolment for 1900-1 was 20; graduates, 2.

It was the presentation of a diploma from this school, for a license to practice, in connection with other facts, that convinced the legislature of Tennessee of the necessity of state control. Hereafter all who expect to practice in that state must stand a state examination, except matriculates of Tennessee colleges who graduate before July, 1902.

Memphis.

Memphis Hospital Medical College.—This school was organized in 1878, and has a faculty composed of 10 professors and 15 assistants, 25 in all. Good clinical facilities are furnished by St. Joseph's Hospital, the City Hospital, with 200 beds, and a college dispensary. It is a member of the Southern Medical College Association. The course includes graded work for four years of six months each; "this, however, applies only to students who matriculated for the first time on or after January 1, 1899." With the addition of a large new building, ample laboratory and lecture-room space is afforded: facilities for practical laboratory work, in connection with the study of clinical cases, have also been added. The total fees for the first two years are $75 each, and $105 for the last two. The Dean is Dr. W. B. Rogers, Memphis. Total registration for 1900-1 was 750; graduates, 189. The twenty-second session begins November 1, 1901, and ends April, 1902.

Hannibal Medical College.—Colored. Some twenty years ago there was chartered under the laws of Tennessee an organization under this name, but there never has been an attempt to carry on regular lectures. Diplomas have been issued at various times, but always to negroes. It is thought that the recently enacted state law, compelling an examination, will abolish this practice.

Sewanee.

Sewanee Medical College.—This is a three-year school and is the Medical Department of the University of the South. It was organized in 1891 and has a faculty of 7 professors, and 14 associates, lecturers, etc., 21 in all. The requirements for admission are those of the Southern Medical College Association, of which this school is a member. The course covers three years of six months each, but the catalogue says that after 1902 four years will be required. The fees are $65 for each of the first two years, and $90 for the last year. The Dean is Dr. John S. Cain, Sewanee. Total enrolment for 1900-1 was 207; graduates, 102. The tenth session commenced July 3, 1901, and will close January 1, 1902.

TEXAS.

Texas, population 3,048,710, has four medical colleges. The University of Texas Department of Medicine is located at Galveston, a city of 37,789 inhabitants. Good board and room can be procured for from $15 to $20 a month. The Medical Department of Fort Worth University is at Fort Worth, population 26,888. The cost of board and room in that city is from $12 to $15 a month. The other two colleges, University of Dallas Medical Department and Dallas Medical College, are situated in Dallas, population 42,638.

Galveston.

University of Texas Medical Department.—This department of the State University was organized in 1891, and has a faculty of 9 professors, and 15 lecturers, assistants, etc., a total of 24. The John Sealy Hospital, also having an outdoor department, and St. Mary's Infirmary supply good material for clinical study. The requirements for admission are proof, either by certificate or examination, that the candidate is sufficiently proficient in English, including grammar, composition and rhetoric; mathematics, through plane geometry and algebra including quadratics, and general history. The curriculum embraces graded work for four years of eight months each. Fees, to residents of the state: First year, $50; second, $20; third, $15, and $5 for the fourth year. Non-residents of the state are required to pay an additional fee of $50 each year. The Dean is Dr. Henry P. Cooke, Galveston. Total registration for 1900-1 was 119; graduates, 6. The next session begins October 1, 1901, and ends June 1, 1902.

Fort Worth.

Medical Department Fort Worth University.—This school was organized in 1894, and has a faculty of 17 professors, and 14 lecturers, assistants, etc., in all 31. Clinical facilities are supplied by St. Joseph's Hospital, with 200 beds; the Benevolent Home, containing 75 beds; the Delia Collins' Rescue Home, having 50 beds, and a college dispensary. The requirements for admission are those of the Southern Medical College Association, of which this school is a member. Instruction is carried on by laboratory, didactic and clinical study. The course covers four years of six months each. The total fees for each of the first three years are $75, and $100 for the fourth year.. The Dean is Dr. Bacon Saunders, Fort Worth. Total enrolment for 1900-1 was 157; graduates, 27. The next session opens October 1, 1901, and closes April 3, 1902.

Dallas.

University of Dallas Medical Department.—This school has but completed its first year. The faculty shows a teaching force of 23. Parkland Hospital, with 90 beds; St. Paul's Sanitarium and a college dispensary are utilized for clinical study. Applicants for admission not possessing a certificate of sufficient work done, "must pass a satisfactory examination before a committee of the faculty." The course covers four years of six months each. The fees are $75 for each of the four years, with a matriculation fee of $5, and a graduation fee of $25, each paid but once. The Dean is Dr. Charles M. Rosser, Dallas. Total registration for 1900-1 was 81: graduates, 15. The second session opens October 1, 1901, and closes April 1, 1902.

Dallas Medical College.—This school has also completed but one year of its existence, recently becoming the Medical Department of Trinity University. The catalogue shows a faculty of 18, and requires four years of six months each for the graduation of all who matriculated after January 1, 1899. The City Hospital, Polyclinic Infirmary and a college dispensary supply clinical material. The requirements for admission claimed are those of the Association of American Medical Colleges, but this school is not a member. Fees: $75 each year for general fee; matriculation fee, $5, and $25 for graduation. The Dean is Dr. Jesse B. Titterington, Dallas. Total enrolment for 1900-1 was 51; graduates, 8. The second session begins October 28, 1901. and ends April 30, 1902.

VERMONT.

Vermont, population 343,641, has one medical school,

Medical Department University of Vermont.—This school is located at Burlington, a town of 18,640 people; it was organized in 1822, but suspended from 1836 until 1854, when it was reorganized. The faculty consists of 20 professors, and 14 adjuncts, instructors, etc., in all 39. The Mary Fletcher Hospital and a free dispensary furnish material for clinical instruction. Applicants for admission must show by certificate or examination sufficient knowledge of the following: English, including grammar, orthography and composition; geography, United States history, arithmetic and elementary physics. The laboratory and lecture room space and equipment are good. The course of study embraces graded work for four years of six months each. The total fees for each of the first three years are $115, and $114 for the fourth year. Board and room costs from $3.50 to $5 a week. The Secretary is Dr. B. J. Andrews, Burlington. Total registration of students for 1900-1 was 155; graduates, 15. The forty-ninth session begins January 2, 1902, and ends June 25, 1902.

VIRGINIA.

Virginia, population 1,854,184, has three medical colleges. The University of Virginia Department of Medicine is situated in Charlotteville, having a population of 6449. Board and room can be obtained at that place for $18 a month and upwards. The other two colleges, Medical College of Virginia and University College of Medicine, are located at Richmond, a city of 85,050 inhabitants. The clinical facilities are good and board and room can be obtained there for from $12 to $20 a month.

University of Virginia Medical Department.—This school was organized in 1825, and has a faculty of 7 professors, and 10 lecturers, instructors, etc., in all 17. A free dispensary furnishes clinical facilities for the present, but the new four-story hospital, now almost completed will add greatly in that direction. The requirements for admission claimed are those of the Association of American Medical Colleges, but this school is not a member of that Association. The course of study embraces four years of nine months each. Fees: First year, $110; second, $100; third, $80, and $60 for the fourth year. Total enrolment for 1900-1 was 173; graduates, 53. The seventy-seventh session opened September 15, and will close June 18, 1902.

Medical College of Virginia.—This school was organized in 1838 as the Medical Department of Hampden Sidney College, and in 1854 the present name was assumed. The faculty is made up of 15 professors, and 20 lecturers, instructors, etc., a total of 35. Clinical material is furnished by the Old Dominion Hospital, Maternity Hospital, and the City Dispensary; an outside obstetric department also furnishes opportunities for clinical work. This school is a member of the Southern Medical College Association, and the requirements for admission are those determined by that Association. The buildings are large and contain well equipped laboratories and amphitheaters. The course embraces four years of seven months each. The fees are $65 for each year, with an additional graduation fee of $30. The Dean is Dr. Christopher Tompkins, Richmond. Total registration for 1900-1 was 203; graduates, 47. The next session begins October 1, 1901, and will end May 3, 1902.

University College of Medicine.—This school was organized in 1893 and has a faculty of 17 professors, 32 lecturers, assistants, etc., a total of 49. Good clinical facilities are furnished by Virginia Hospital, with a maternity department and annex which was built especially for the purpose of affording clinical instruction; Richmond Eye, Ear and Throat Infirmary, containing 34 beds; the City Hospital, and a college dispensary. Applicants for matriculation must show by certificate or examination to be possessed of a certain proficiency in English, mathematics and Latin. The laboratory and lecture-room space and equipment are ample. The curriculum covers four years of seven months each. The total fees are $85 for each year. The Dean is Dr. J. Allison Hodges, Richmond. Total enrolment for 1900-1 was 224; graduates, 72. The next session begins October 1, 1901, and ends May 15, 1902.

WISCONSIN.

Wisconsin, population 2,069,042, has two medical colleges, the Milwaukee Medical College and Wisconsin College of Physicians and Surgeons. They are both situated in Milwaukee, a city of 285,315 people. Clinical facilities are furnished them in common by the County Hospital, with 175 beds, and the Milwaukee Hospital for the Insane. Board and lodging can be had for from $3 to $5 a week.

Milwaukee Medical College.—This school was organized in 1893, and has a faculty of 22 professors, 7 associates, and 28 lecturers, instructors, etc., a total of 57. Good clinical material is furnished by Trinity, St. Mary's, and the County hospitals, Milwaukee Hospital for the insane, and a college dispensary. This school is a member of the Association of American Medical Colleges, and the requirements for admission are those specified by that body. Ample laboratory and amphitheater facilities are afforded. The course covers four years of seven months each. The total fees are $60 each for the first three years, and $70 for the fourth year. The Dean is Dr. William H. Earles, Milwaukee. Total number of students for 1900-1 was 178; graduates, 36. The eighth session began September 18, and will close April 15, 1902.

Wisconsin College of Physicians and Surgeons.—This college was organized in 1893, and has a faculty composed of 24 professors, and 22 associates, assistants, etc., a total of 46. St. Joseph's Hospital, containing 150 beds; Wisconsin Maternity Hospital, a college dispensary and the material used in common with the other school supply ample facilities for clinical study. The requirements for admission are those of the Association of American Medical Colleges, of which this school is a member. The laboratories and lecture rooms are well equipped. The curriculum includes work for four years, seven and one-half months constituting a year. Fees: Matriculation, paid once, $5; general ticket for each semester, $40; for the use of microscope, a fee of $2 is charged for each course. The Secretary is Dr. J. A. Bach, Milwaukee. Total enrolment for 1900-1 was 123; graduates, 18. The next session begins September 24, 1901, and ends May 13, 1902.

THE ASSOCIATION OF AMERICAN MEDICAL COLLEGES.

Regarding the requirements for admission to be maintained by colleges belonging to this Association. They are as follows:

Section 1.—Each college holding membership in this Association shall require of each student, *before admission* to its course of study, an examination, the minimum of which shall be as follows:

1. In *English*, a composition on some subject of general interest. This composition must be written by the student at the time of the examination, and should contain at least 200 words. It should be criticised in relation to thought, construction, punctuation, spelling, and handwriting.

2. In *Arithmetic*, such questions as will show a thorough knowledge of common and decimal fractions, compound numbers, and ratio and proportion.

3. In *Algebra*, such questions as will bring out the student's knowledge of the fundamental operations, factoring, and simple quadratic equations.

4. In *Physics*, such questions as will discover the student's understanding of the elements of mechanics, hydrostatics, hydraulics, optics, and acoustics.

5. In *Latin*, an examination upon such elementary work as the student may offer, showing a familiarity usually attained by one year of study; for example, the reading of the first 15 chapters of Cæsar's Commentaries, and the translation into Latin of easy English sentences involving the same vocabulary.

Sec. 2.—In place of this examination, or any part of it, colleges, members of this Association, are at liberty to recognize the official *certificates of reputable* literary and scientific colleges, academies, high schools, and normal schools, and also the medical student's certificate issued by any state examining board covering the work of the foregoing entrance examination.

Sec. 3.—Colleges, members of this Association, may allow students *who fail in one or more branches* in this entrance examination the privilege of entering the first-year course, but such students shall not be allowed to begin the second course until the entrance requirements are satisfied.

Sec. 4.—Colleges, members of this Association, are free to honor official *credentials issued by medical colleges of equal requirements*, except in the branches of study embraced in the last year of their own curriculum.

Sec. 5.—Candidates for the degree of Doctor of Medicine in the year 1899 and thereafter shall have attended at least *four courses*

Name of College.	Population of city in which coll. is located.	No. students registered, Session 1900-1.	Graduates, 1901.	Total No. of teachers.	No. of weeks in college year.	Total graduates all colleges in state, 1901.	Total students, all colleges in state, 1900-1.	Population of state.	No. of physicians in the state.	No. of population to one physician.
ALABAMA						53	207	1,828,697	2000	914
Birmingham Medical College.—R	38,469	77	15	26	27					
Medical College of Alabama.—R	"	130	38	20	26					
ARKANSAS						20	240	1,311,564	2400	546
Medical Department Arkansas University.—R	38,307	240	20	21	26					
CALIFORNIA						128	678	1,311,564	2400	416
California Medical College.—E	342,782	49	10	28	32					
College of Physicians and Surgeons, San Francisco.—R	"	171	38	36	26					
Cooper Medical College.—R	"	167	27	30	32					
Hahnemann Hospital College of San Francisco.—H	"	40	6	28	28					
University of California, Medical Department.—R	"	164	28	40	32					
Pacific Coast Regular College of Medicine.[1]—R	"	....	....	....	....					
College of Medicine, University of Southern California.—R	102,479	87	19	31	36					
COLORADO						49	248	539,700	1300	415
Colorado School of Medicine.—R	6,150	70	9	25	36					
Denver Homeopathic College.—H	133,859	40	5	31	27					
Gross Medical College.—R	"	78	15	44	36					
Denver College of Medicine.—R	"	60	20	46	34					
CONNECTICUT						18	133	908,420	1550	585
Yale University, Medical Department.—R	*108,027*	*133*	*18*	53	38					
DISTRICT OF COLUMBIA						77	547	278,718	1000	271
Howard University, Medical Department.[5]—R	278,718	142	19	25	30					
Medical Department, Columbian University.—R	"	249	26	52	32					
National University Medical Department.—R	"	33	11	41	34					
University of Georgetown School of Medicine.—R	"	123	21	49	35					
GEORGIA						118	444	2,216,331	3200	692
Atlanta College of Physicians and Surgeons.—R	89,872	282	67	31	26					
Georgia College of Eclectic Medicine and Surgery.—E	"	55	21	12	26					
Medical College of Georgia.—R	39,441	107	30	20	26					
ILLINOIS						736	3662	4,821,550	8600	561
American Medical Missionary College.—R	1,698,575	119	13	21	36					
Bennett College of Eclectic Medicine and Surgery.—E	"	124	37	29	26					
Chicago Homeopathic Medical College.—H	"	152	48	57	28					
College of Medicine and Surgery.—Ph.M	"	46	9	31	28					
College of Physicians and Surgeons, Chicago.—R	"	676	164	115	39					
Dunham Medical College.—H	"	122	18	39	28					
Hahnemann Medical College and Hospital.—H	"	*175*	*51*	*49*	*36*					
Harvey Medical College.—R	"	270	17	[2]47	40					
Hering Medical College.—H	"	60	12	36	28					
Illinois Medical College.—R	"	202	36	39	26					
Jenner Medical College.—R	"	101	13	[2]32	42					
Northwestern University Medical School.—R	"	344	74	86	36					
Rush Medical College.—R	"	1055	213	124	36					
Northwestern University Woman's Medical School.—R	"	72	19	52	39					
National Medical University[7]	"	144	12	61	36					
Chicago Eclectic College.[6]—E	......	....	....	....	....	....	....	....	....	....
INDIANA						82	423	2,516,462	5100	493
Central College of Physicians and Surgeons.—R	169,164	87	23	43	26					
[illegible] nstitute[1]	"	....	....	....	....					
[illegible] na.—R	"	253	46	57	28					
[illegible] of Indiana.—Ph.M	"	34	9	29	26					
[illegible] of Indiana.—E	"	14	0	22	26					
Fort Wayne College of Medicine.—R	45,115	35	4	31	26					
IOWA						121	708	2,231,853	3700	603
Keokuk Medical College of Physicians and Surgeons.—R	14,641	247	51	15	28					
Iowa College of Physicians and Surgeons.—R	62,139	78	14	23	38					
Sioux City College of Medicine.—R	33,111	52	5	15	33					
State University of Iowa, Homeopathic Medical Dept.—H	7,987	59	16	[3]19	38					
State University of Iowa, Medical Department.—R	"	272	35	[2]31	38					
KANSAS						31	232	1,470,495	2650	555
College of Physicians and Surgeons of Kansas City.—R	51,418	87	31	37	28					
Kansas Medical College.—R	33,608	98	0	33	26					
School of Medicine, University of Kansas[4].—R	......	47	....	[3]18	36					
KENTUCKY						190	1266	2,147,174	3900	551
Hospital College of Medicine.—R	204,731	334	52	41	26					
Kentucky School of Medicine.—R	"	309	43	36	26					
Louisville Medical College.—R	"	196	25	23	26					
Louisville National Medical College.[5]—R	"	21	4	15	26					
Southwestern Homeopathic Medical College.—H	"	33	11	31	28					
Medical Department, University of Louisville.—R	"	157	35	37	26					
Kentucky University, Medical Department.—R	"	204	20	35	25					
Medical Department, State University[5].—R	"	12	....	8	26					
LOUISIANA						116	422	1,381,625	1400	987
New Orleans University, Medical Department.[5]—R	287,104	32	2	9	26					
Tulane University, Medical Department.—R	"	390	114	24	26					
MAINE						40	90	694,466	1250	556
Medical School of Maine, Bowdoin College.—R	5,210	90	40	18	26					
MARYLAND						358	1611	1,188,044	2100	566
Baltimore Medical College.—R	508,957	507	97	45	28					
Baltimore University School of Medicine.—R	"	66	31	28	26					
College of Physicians and Surgeons of Baltimore.—R	"	359	59	52	28					
Medical Department, Johns Hopkins University.—R	"	209	54	64	32					
Southern Homeopathic Medical College.—H	"	32	10	39	28					
University of Maryland, School of Medicine.—R	"	332	71	59	28					
Woman's Medical College of Baltimore.—R	"	31	7	27	32					
Maryland Medical College.—R	"	75	29	25	26					
MASSACHUSETTS						184	1122	2,805,346	6200	452
Boston University School of Medicine.—H	560,892	127	24	58	32					
College of Physicians and Surgeons.—R	"	127	9	33	32					
Harvard University Medical School.—R	"	591	116	31	36					
Tufts' College Medical School.—R	"	277	35	53	32					
MICHIGAN						206	1119	2,420,982	4573	529
Detroit College of Medicine.—R	*285,704*	*224*	*45*	*95*	28					
Detroit Homeopathic Medical College.—H	"	41	4	33	28					
Michigan College of Medicine and Surgery.—R	"	75	25	23	28					
Grand Rapids Medical College.—R	87,565	47	17	31	26					
Saginaw Valley Medical College.—R	42,345	102	24	30	32					
University of of Michigan Dept. of Medicine and Surgery.—R	14,590	563	75	66	36					
University of Michigan Homeopathic Medical College.—H	"	67	16	11	36					

Name of College.	Population of city in which coll. is located.	No. students registered, Session 1900-1.	Graduates, 1901.	Total No. of teachers.	No. of weeks in college year.	Total graduates all colleges in state, 1901.	Total students, all colleges in state, 1900-1.	Population of state.	No. of physicians in the state.	No. of population to one physician.
MINNESOTA	......	....	....	....	....	89	480	1,751,394	1745	1004
College of Homeopathic Med. and Surg., Univ. of Minn.—H	202,718	26	4	22	34					
College of Medicine and Surgery, Univ. of Minnesota.—R	"	323	60	77	36					
Medical Department of Hamline University.—R	"	131	25	45	36					
MISSOURI	......	....	....	....	....	525	2300	3,106,665	6125	507
Medico-Chirurgical College.—R.	163,752	117	25	46	26					
Kansas City Univ. College of Homeo. Med. and Surg.[9] [1]—H	"	....	....	....	....					
Woman's Medical College.—R	"	23	9	37	28					
University Medical College of Kansas City.—R	"	246	69	56	26					
Kansas City Homeopathic Medical College.[9]—H	"	50	12	32	28					
Kansas City Medical College.—R	"	114	44	31	28					
Eclectic Medical University.—E	"	48	14	20	26					
[illegible]—R	102,979	57	2	30	26					
[illegible]-R.	"	63	8	23	26					
[illegible]	579,238	520	111	44	28					
[illegible] ge of Medicine.—R	"	366	87	60	28					
[illegible] ans and Surgeons.—R	"	243	52	44	28					
[illegible] E.	"	75	16	27	26					
[illegible] e of Missouri.—H	"	66	11	31	28					
Medical Department, Washington University.—R	"	227	54	56	28					
University of the State of Missouri.—R	5,651	85	11	25	36					
NEBRASKA	......	....	....	....	....	62	346	1,066,300	1475	723
Omaha Medical College.—R	102,555	149	23	36	28					
John A. Creighton Medical College.—R	"	123	27	42	32					
Lincoln Medical College of Cotner University.—E	40,169	74	12	25	28					
NEW HAMPSHIRE	......	....	....	....	....	27	89	411,588	730	564
Dartmouth Medical College.—R	1,825	89	27	17	26					
NEW YORK	......	....	....	....	....	400	2323	7,268,894	12,-	603
Albany Medical College.—R	94,151	142	28	55	26					
College of Physicians and Surgeons.—R	3,437,202	801	149	82	32					
Cornell University Medical College.—R	"	356	26	98	36					
Eclectic Medical College.—E	"	84	12	35	28					
Long Island College Hospital.—R	"	187	41	69	30					
New York Homeopathic Medical College and Hospital.—H	"	107	27	48	28					
New York Medical College and Hospital for Women.—H	"	33	9	43	30					
University and Bellevue Hospital Medical College.—R	"	285	43	113	28					
Syracuse University College of Medicine.—R	108,374	116	19	41	32					
University of Buffalo, Medical Department.—R	352,387	212	46	68	28					
NORTH CAROLINA	......	....	....	....	....	9	50	1,893,810	1600	1184
Leonard Medical School.—R	13,643	8	1	8	26					
North Carolina Medical College.—R	904	42	8	6	26					
Medical Department, University of North Carolina[4].—R	......	[8]	....	....	....					
OHIO	......	....	....	....	....	307	1415	4,157,545	8500	489
Western Reserve University Medical College.—R	381,768	133	24	56	32					
Cleveland College of Physicians and Surgeons.—R	"	78	15	57	32					
Cleveland Homeopathic Medical College.—H	"	150	46	45	32					
Eclectic Medical Institute.—E	325,902	141	26	29	28					
Cincinnati College of Medicine and Surgery.—R	"	82	16	37	28					
Laura Memorial Woman's Medical College.—R	"	24	5	26	28					
Medical College of Ohio.—R	"	200	60	41	28					
Pulte Medical College.—H	"	39	5	31	28					
Miami Medical College.—R	"	112	25	34	28					
Ohio Medical University.—R	125,560	228	45	31	28					
Starling Medical College.—R	"	173	32	29	28					
Toledo Medical College.—R	131,822	55	8	34	28					
OREGON	......	....	....	....	....	16	91	413,536	887	466
University of Oregon, Medical Department.—R	90,426	64	11	26	26					
Medical Department, Williamette University.—R	4,258	27	5	17	26					
PENNSYLVANIA	......	....	....	....	....	495	2486	6,302,115	9526	662
University of Pennsylvania Department of Medicine.—R	1,293,697	565	160	103	32					
Hahnemann Medical College and Hospital.—H	"	264	52	57	30					
Jefferson Medical College.—R	"	736	106	84	32					
Woman's Medical College of Pennsylvania.—R	"	175	37	53	32					
Medico-Chirurgical College of Philadelphia.—R	"	408	67	72	32					
Western Pennsylvania Medical College.—R	321,616	338	73	68	32					
SOUTH CAROLINA	......	....	....	....	....	32	95	1,340,316	1194	1123
Medical College of the State of South Carolina.—R	55,807	95	32	24	26					
TENNESSEE	......	....	....	....	....	658	2126	2,020,616	3635	556
Tennessee Medical College.—R	32,637	97	35	19	26					
Knoxville Medical College.[5]—R	"	34	4	11	26					
Medical Department University of Nashville.—R	"	182	66	27	26					
Vanderbilt University Medical Department.—R	"	211	92	30	26					
University of Tennessee, Medical Department.—R	80,865	182	75	27	26					
Meharry Medical [illegible]	"	217	39	20	26					
Memphis Hospital " [illegible]	102,320	750	189	25	26					
Sewanee Medical [illegible]	1,200	209	102	21	26					
Chattanooga National Medical College.[6]—R	30,154	20	2	9	28					
Chattanooga Medical College.—R	"	224	54	24	26					
TEXAS	......	....	....	....	....	56	408	3,048,710	4980	612
Medical Department Fort Worth University.—R	26,688	157	27	31	26					
University of Texas Department of Medicine.—R	37,789	119	6	24	32					
University of Dallas Medical Department.—R	42,638	81	15	23	26					
Dallas Medical College.—R	"	51	8	18	26					
VERMONT	......	....	....	....	....	15	155	343,641	750	451
University of Vermont Medical Department.—R	18,640	155	15	39	26					
VIRGINIA	......	....	....	....	....	172	600	1,854,184	2200	843
Medical College of Virginia.—R	85,050	203	47	35	30					
University College of Medicine.—R	"	224	72	49	30					
University of Virginia Department of Medicine.—R	6,449	173	53	17	36					
WISCONSIN	......	....	....	....	....	54	301	2,069,042	2212	935
Milwaukee Medical College.—R	285,315	178	36	57	30					
Wisconsin College of Physicians and Surgeons.—R	"	123	18	46	32					

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[1] No information to be obtained except that such college is in existence.

[2] Some are also teachers in day schools.

[3] Some are in both departments of this university.

[4] Does not grant degrees.

[5] Colored.

[6] Just organized.

[7] Apparently grants any degree.

[8] Could not be ascertained.

[9] Recently consolidated under the name, Hahnemann College of Kansas City.

NAME OF COLLEGE.	Alabama.	Arizona.	Arkansas.	California.	Colorado.	Connecticut.	Delaware.	D'st. Columbia.	Florida.	Georgia.	Idaho.	Illinois.	Indian Ter.	Indiana.	Iowa.	Kansas.	Kentucky.	Louisiana.	Maine.	Maryland.	Massachusetts.
Birmingham Medical College	74	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Medical College of Alabama	117	..	..	..	..	..	..	..	2	1	..	..	..	..	..	..	..	..	..	..	..
Med. Dept. Arkansas University	..	..	206	..	..	..	..	..	..	..	..	..	12	..	..	..	..	3	..	..	..
University of California Med. Dept	..	2	..	139	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	1
Denver Homeopathic College	1	..	2	3	15	..	..	..	..	..	..	2	..	2	2	2	..	..	..	..	..
Gross Medical College	..	..	..	..	49	2	..	..	..	..	..	1	..	..	2	2	2	2	..	..	..
Denver College of Medicine	..	..	1	..	30	3	..	..	..	..	..	2	..	..	1	..	..	..	..	..	2
Yale University Medical Department	..	..	..	..	..	100	..	1	..	..	..	..	..	..	..	2	..	..	1	..	11
Howard University Medical Department	3	..	2	..	..	..	1	22	3	8	..	2	..	3	1	2	1	1	1	5	..
Medical Department Columbian University	..	..	..	..	..	1	..	..	..	4	..	..	..	4	1	1	..	..	..	..	4
University of Georgetown Medical Dept	1	..	..	1	1	1	..	38	1	1	..	3	..	1	1	1	..	1	..	6	29
Atlanta College of Physicians and Surgeons	23	..	3	..	..	..	..	..	15	171	..	..	..	..	..	..	..	6	..	..	1
American Medical Missionary College	..	..	..	8	1	..	..	1	1	..	..	8	..	4	13	1	2	..	..	..	2
Bennett College of Eclectic Med. and Surg	..	..	1	..	..	..	..	..	..	..	..	53	..	18	6	..	2	..	..	..	..
Chicago Homeopathic Medical College	..	..	..	..	..	..	..	..	..	..	..	64	..	13	14	7	2	..	1	..	2
College of Medicine and Surgery	..	..	..	..	..	..	..	..	..	..	..	23	..	..	2	..	..	..	..	..	..
College of P. and S. of Chicago	..	..	3	..	1	..	..	..	1	1	..	322	..	37	99	12	1	..	..	..	..
Dunham Medical College	..	..	..	..	3	1	..	..	2	..	..	70	..	5	7	1	..	..	..	..	..
Hahnemann Med. College and Hospital	..	..	..	1	..	..	1	1	..	..	..	78	..	6	19	4	1	..	1	..	1
Hering Medical College	..	..	..	..	..	..	..	..	..	..	..	19	..	4	2	5	1	..	..	..	..
Illinois Medical College	1	..	..	2	1	..	..	..	..	1	3	57	..	42	6	2	1	3	..	..	1
Northwestern University Medical School	1	..	..	1	4	..	..	..	..	..	..	182	..	14	25	11	1	..	..	..	..
Rush Medical College	2	..	..	8	6	1	..	..	1	1	1	313	..	54	106	30	5	1	..	..	3
Northwestern Univ. Women's Med. College	..	..	1	2	..	..	..	..	..	..	1	37	..	2	7	2	..	..	..	..	..
Medical College of Indiana	..	..	1	..	..	..	..	..	..	..	..	11	..	233	..	1	1	..	..	..	..
Physio-Medical College of Indiana	..	..	..	1	..	..	..	..	..	..	..	3	..	15	2	..	..	..	..	..	..
Keokuk Medical College of Phys. and Surg	..	..	..	1	1	..	..	..	..	..	..	78	..	3	109	6	..	..	..	..	1
Iowa College of Physicians and Surgeons	..	..	..	..	..	..	..	..	..	..	..	..	..	..	72	1	..	..	..	..	..
Sioux City College of Medicine	..	..	..	..	..	..	..	..	..	..	..	1	..	1	39	..	..	..	..	..	..
State Univ. of Iowa Homeo. Med. Dept	..	..	..	..	..	..	..	..	..	..	..	3	..	..	53	..	..	..	..	..	..
State Univ. of Iowa Med. Dept	..	..	..	..	..	..	..	..	..	..	..	10	..	..	249	..	..	..	..	..	..
College of P. and S. of Kansas City	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	65	..	..	..	..	..
Kansas Medical College	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	87	..	..	..	..	..
School of Medicine of Univ. of Kansas	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	46	..	..	..	..	..
Hospital College of Medicine	4	..	8	..	..	..	..	..	2	2	..	13	..	43	..	..	207	1	..	..	..
Louisville Medical College	4	..	8	1	1	..	..	..	..	2	..	3	1	27	3	4	58	6	..	..	..
Medical Department State University	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	8	..	..	..	..
S. W. Homeopathic Medical College	1	..	..	..	..	..	..	..	..	..	..	1	..	6	..	..	22	..	..	..	..
Med. Dept. Univ. of Louisville	..	..	4	..	1	..	..	..	1	..	..	3	1	32	..	..	83	..	..	..	1
Kentucky University Med. Dept	3	..	2	1	..	1	..	..	1	6	..	5	1	25	1	3	90	4	..	..	..
New Orleans University Med. Dept	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	20	..	..	..
Tulane University Medical Department	25	12	..	..	..	..	..	..	5	5	..	..	..	..	..	..	2	194	..	..	..
Med. School of Maine at Bowdoin College	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	74	..	8
Baltimore Medical College	5	..	..	..	..	20	4	..	1	3	..	5	..	3	1	..	2	1	23	63	95
Baltimore University School of Medicine	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	..	..	1	21	4
College of P. and S. of Baltimore	4	..	..	..	..	8	2	..	2	5	..	..	..	..	..	..	..	..	5	42	24
Med. Dept. Johns Hopkins University	1	..	1	8	..	10	..	6	1	5	..	14	..	3	1	2	5	1	8	41	12
Southern Homeopathic Med. College	..	..	..	..	..	..	3	1	..	..	..	..	..	..	..	..	..	..	..	18	..
University of Maryland School of Medicine	..	..	..	..	..	3	2	1	5	16	..	..	..	..	..	..	1	..	1	146	6
Women's Medical College of Baltimore	..	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	14
Maryland Medical College	1	..	..	..	1	1	1	..	..	2	..	..	..	..	..	..	..	..	2	12	2
Boston University School of Medicine	1	..	..	..	..	4	1	..	..	..	..	1	..	..	..	..	..	..	6	1	88
College of Physicians and Surgeons	..	..	..	..	..	3	1	..	..	..	..	1	..	..	1	..	..	..	4	..	78
Harvard University Medical School	..	..	..	1	1	8	..	..	..	1	..	5	..	1	5	1	..	..	26	..	471
Tuft's College Medical School	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	10	..	224
Detroit College of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	2	1	..	..	..	..	..	2
Saginaw Valley Medical College	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	[illegible]
University of Michigan Dept. of M. and S.	2	..	..	5	2	2	..	..	..	1	..	42	..	21	11	6	1	..	..	..	4
University of Michigan Homeo. Med. Coll	..	..	..	..	..	1	..	..	..	..	..	2	..	4	..	..	..	..	..	..	1
Detroit Homeopathic Medical College	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
College of Homeo. M. and S., Univ. of Minn.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	[illegible]
Medical Department of Hamline University	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
University of Minnesota College of M. and S.	..	..	..	3	..	..	..	..	..	..	..	..	..	1	10	..	..	..	..	..	1
Medico-Chirurgical College	..	1	1	1	..	..	..	..	..	..	..	1	..	..	3	41	..	2	..	..	..
Woman's Medical College	..	..	..	7	..	..	..	..	..	..	..	..	..	..	1	3	..	..	..	..	..
Central Medical College	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6	10	..	..	..	..	..
Barnes Medical College	1	1	19	1	..	..	..	1	..	2	1	102	9	17	27	17	18	1	..	..	..
University Medical College of Kansas City	..	1	1	1	1	..	..	..	..	..	1	5	3	..	6	80	2	..	..	..	..
Kansas City Homeopathic Medical College	..	..	..	1	1	..	..	..	..	..	..	..	..	1	..	20	..	..	..	..	..
Marion-Sims-Beaumont College of Medicine	..	1	11	3	..	..	..	..	1	..	..	94	5	6	12	10	3	3	..	..	1
St. Louis College of Physicians and Surg	..	..	12	1	..	..	..	..	1	..	..	80	1	6	22	1	6	..	..	..	..
American Medical College	..	..	6	..	..	..	..	..	..	..	..	13	..	3	..	3	..	..	..	..	..
Kansas City Medical College	..	1	2	..	..	..	..	..	..	..	..	1	1	..	..	59	..	..	..	..	..
University of the State of Missouri	..	..	1	..	..	..	..	..	..	..	..	4	1	..	3	1	1	..	..	..	1
Medical Department Washington Univ	..	..	11	..	1	..	..	..	1	..	..	56	2	4	2	5	1	2	..	..	1
Eclectic Medical University	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	13	..	..	..	..	..
Omaha Medical College	..	..	..	..	1	..	..	..	..	..	..	2	..	..	35	1	..	..	..	..	..
John A. Creighton Medical College	..	..	..	..	..	..	..	..	..	..	..	2	..	..	28	1	..	..	..	..	..
Union University Albany Medical College	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	7
Cornell University Medical College	1	..	..	1	..	8	..	1	..	..	..	1	..	..	1	1	2	1	..	..	7
Eclectic Medical College of New York	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Long Island College Hospital	..	..	..	..	..	4	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..
New York Homeo. Med. Coll. and Hospital	..	..	..	..	..	3	..	..	..	..	..	..	..	1	..	..	1	1	1	..	..
Syracuse University School of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	..	..
Leonard Medical College	6	..	..	..	..	1	..	..	..	3	..	..	..	..	..	..	..	..	..	1	1
North Carolina Medical College	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cincinnati College of Medicine and Surgery	..	..	..	..	..	..	..	..	..	..	..	1	..	3	..	..	8	..	..	..	..
Cleveland College of Physicians and Surg	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cleveland Homeopathic Medical College	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Eclectic Medical Institute	..	..	1	1	..	..	..	1	1	1	..	10	..	20	1	1	9	..	..	..	..
Laura Memorial Woman's Medical College	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	5	..	..	..	..
Medical College of Ohio	1	..	..	..	..	..	..	..	..	..	..	..	..	17	..	3	34	..	..	..	..
Medical Department Western Reserve Univ	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1
Miami Medical College	..	..	..	..	..	..	..	..	1	..	..	4	..	8	1	..	15	..	..	..	..
Ohio Medical University	..	..	..	..	..	..	..	..	1	..	..	2	..	..	..	1	2	..	..	..	..
Pulte Medical College	1	..	..	1	..	1	..	..	..	..	..	..	..	2	..	..	7	..	..	..	1
Starling Medical College	..	..	..	1	..	2	..	..	..	..	..	..	..	5	..	..	..	..	..	..	..
Toledo Medical College	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

Rush Medical College and College of Physicians and Surgeons, Baltimore, do not give complete list by states.

Michigan.	Minnesota.	Mississippi.	Missouri.	Montana.	Nebraska.	New Hampshire.	New Jersey.	New Mexico.	New York.	Nevada.	N. Carolina.	N. Dakota.	Ohio.	Oklahoma.	Oregon.	Pennsylvania.	Rhode Island.	S. Carolina.	S. Dakota.	Tennessee.	Texas.	Utah.	Vermont.	Virginia.	Washington.	W. Virginia.	Wisconsin.	Wyoming.	Foreign.
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15	6	..	4	..	6	..	..	..	3	..	..	1	12	2	2	2	..	1	..	1	2	1	2	..	2	..	8	..	8
9	3	..	2	..	1	..	..	..	..	..	..	1	6	..	1	1	..	..	..	..	3	..	..	..	..	1	12	..	4
8	..	..	..	2	3	..	..	..	3	..	..	..	14	..	..	4	..	..	1	..	1	..	..	..	..	..	12	..	1
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7	4	..	4	1	6	..	3	..	7	..	..	..	5	..	..	4	..	..	1	..	1	1	..	..	1	..	14	..	3
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13	8	..	2	4	8	..	..	..	7	..	..	..	5	..	..	1	..	..	4	..	2	1	..	..	2	1	44	..	3
19	34	1	19	4	17	1	..	..	4	..	..	4	20	..	2	6	1	..	9	..	4	8	..	1	4	1	123	3	4
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2	1	7	6	1	..	..	..	..	3	..	..	..	5	..	..	..	..	2	..	2	15	..	..	4	..	6	..	..	..
..	..	16	3	1	1	..	..	..	..	..	4	..	4	2	..	..	..	..	..	2	34	..	..	2	2	5	2	..	..
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..	..	6	16	1	..	..	..	..	1	..	3	..	..	..	..	1	..	1	..	6	15	..	..	1	1	8	..	..	2
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..	2	53	..	..	..	..	..	..	..	..	3	..	..	1	..	..	..	1	..	3	78	..	1	2	..	..	..	..	3
..	..	..	..	..	..	3	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3
..	..	..	1	..	..	10	31	..	36	..	12	3	15	..	..	83	7	7	..	2	2	..	25	8	..	20	..	..	19
..	..	..	..	..	..	..	6	..	19	..	1	..	1	..	..	5	1	..	..	..	..	..	..	..	..	4	..	..	1
..	..	..	..	..	1	4	22	..	29	..	6	..	17	..	1	42	15	7	..	1	2	10	..	7	..	22	..	..	18
2	4	..	5	3	..	..	7	..	13	..	4	1	5	..	..	14	..	..	1	..	1	..	1	10	..	2	11	..	6
..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	5	..	..	..	1	..	..	..	1	..	1	..	..	1
..	1	..	..	..	1	1	1	..	15	..	35	..	1	..	..	13	1	23	..	1	2	..	3	26	..	15	..	..	12
2	..	1	..	..	..	..	1	..	2	..	..	..	1	..	..	4	..	..	..	..	..	..	..	2	..	2	..	..	..
..	..	..	..	..	..	5	2	..	9	..	2	..	3	..	..	9	1	1	..	1	..	..	..	5	..	12	..	..	3
1	..	..	..	..	1	5	3	..	4	..	..	..	1	..	..	2	2	..	..	..	..	..	..	1	..	..	..	..	5
2	1	..	..	..	..	7	1	..	4	..	..	..	..	..	..	3	8	..	..	..	..	..	4	1	..	..	..	..	8
..	..	..	3	..	1	26	..	..	9	..	..	..	3	..	..	2	15	..	..	..	1	..	3	1	2	..	..	..	6
..	..	..	..	..	..	19	..	..	2	..	..	..	..	..	..	..	10	1	..	..	..	1	2	..	..	..	..	..	5
144	1	..	1	..	..	..	..	..	6	..	..	2	11	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	53
76	1	..	..	1	..	..	..	..	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	1	..	17
300	4	1	4	2	6	1	2	1	42	..	2	8	38	1	1	17	2	1	1	3	..	1	4	2	3	..	8	..	11
39	2	..	..	2	..	..	..	..	7	..	..	..	2	..	..	1	..	..	..	..	..	..	2	..	..	..	..	..	4
28	..	..	..	..	..	..	..	..	1	..	..	..	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4
..	19	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	5	..	..
..	110	..	..	..	..	..	..	..	..	..	..	10	..	..	..	..	..	..	3	..	..	..	..	..	..	..	7	..	1
2	258	..	..	1	..	..	..	..	..	..	..	17	..	..	1	..	..	..	4	..	..	..	..	..	..	..	22	..	3
..	1	..	60	..	..	..	..	..	..	..	..	..	..	4	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..
..	..	..	14	..	1	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..
..	..	..	34	..	..	..	1	..	1	..	..	..	..	4	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..
2	1	3	210	..	..	..	..	..	2	..	..	..	11	5	..	3	..	1	3	4	41	..	..	1	1	7	..	..	8
1	1	..	118	..	3	..	..	..	..	..	..	..	3	4	3	2	..	..	..	..	4	..	..	1	1	1	..	..	3
..	..	..	24	..	1	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	1	4	173	2	2	..	..	..	1	..	..	3	2	2	2	3	..	..	1	2	8	..	..	..	5	..	2	2	1
..	1	3	83	1	1	..	..	..	1	..	..	..	2	6	1	1	..	..	..	1	8	..	..	..	..	1	1	..	2
..	..	..	46	..	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..
1	3	..	31	1	4	..	..	..	..	..	..	..	..	6	..	..	..	..	..	..	..	..	..	..	4	..	..	..	..
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1	..	..	..	..	..	..	..	..	..	..	..	..	14	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1
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2	..	..	..	1	..	..	..	..	4	..	..	..	192	..	..	15	..	..	..	..	..	..	..	1	..	3	..	..	4
..	1	..	..	..	..	..	..	..	3	..	..	..	19	..	..	1	..	..	..	..	..	..	..	..	..	2	..	..	..
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Name of College.	Alabama.	Arizona.	Arkansas.	California.	Colorado.	Connecticut.	Delaware.	Dist. Columbia.	Florida.	Georgia.	Idaho.	Illinois.	Indian Ter.	Indiana.	Iowa.	Kansas.	Kentucky.	Louisiana.	Maine.	Maryland.	Massachusetts.
University of Oregon Medical Department..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..
Williamette University Medical Department.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Department of Medicine University of Penn..	4	..	..	4	..	6	6	2	2	1	..	11	..	3	5	4	4	2	11	10	9
Hahnemann Medical College and Hospital..	..	..	..	1	2	8	8	2	..	..	..	1	..	1	1	..	..	..	..	9	[illegible]
Jefferson Medical College..............	2	..	6	8	4	7	10	1	1	8	1	10	..	9	9	2	4	2	8	8	30
Western Pennsylvania Medical College.....	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Woman's Medical College of Pennsylvania..	1	..	..	..	2	6	..	2	..	..	..	..	..	1	1	5	2	1	..	1	13
Medico-Chirurgical College of Philadelphia..	..	..	..	2	..	5	8	..	..	..	..	..	..	1	2	..	9	..	1	3	5
Medical College of the State of S. Carolina.	..	..	..	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	..
Chattanooga Medical College............	27	..	9	..	1	..	..	..	7	22	1	3	5	1	1	..	2	8	..	..	1
Medical Department Univ. of Tennessee....	9	..	2	..	..	..	..	..	1	2	..	4	5	2	..	..	24	3	..	..	..
Meharry Medical College..............	15	..	11	1	..	1	..	..	10	17	..	6	..	3	..	5	16	3	..	..	..
Memphis Hospital Medical College.........	45	..	133	..	..	..	..	..	..	2	..	..	14	1	1	..	5	57	..	..	..
Medical Department University of the South.	16	..	7	..	..	1	..	..	3	14	..	1	..	..	4	..	3	23	..	..	3
Tennessee Medical College..............	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	9	..	..	..	..
University of Nashville Medical Department.	8	..	11	..	..	..	..	..	..	2	..	..	2	3	..	3	9	11	..	..	..
Vanderbilt University Medical Department.	23	..	16	2	..	..	..	..	2	4	..	4	..	..	5	..	15	3	2	..	..
Chattanooga National Medical College.....	3	..	..	..	..	..	..	..	..	9	..	..	..	..	..	..	..	..	..	..	..
Hannibal Medical College..............	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Medical Department Ft. Worth University..	..	..	..	..	..	..	..	..	..	..	1	..	7	..	..	..	..	..	..	..	..
Medical Department University of Texas...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
University of Dallas Medical Department...	..	..	..	..	..	..	..	..	..	..	..	..	6	..	..	..	..	..	..	..	..
Dallas Medical College................	..	1	..	..	..	1	..	..	..	..	..	..	6	..	..	..	..	..	..	..	..
University of Vermont Medical Department.	..	..	..	..	..	4	..	..	..	..	..	..	..	..	..	..	..	..	8	..	21
University College of Medicine...........	..	..	..	..	..	..	..	..	5	..	..	..	..	..	..	..	..	..	..	1	..
University of Virginia Medical Department.	..	..	..	2	1	..	..	..	2	2	3	..	..	..	..	1	..	4	1	..	4
Milwaukee Medical College.............	..	..	..	..	..	..	..	..	..	..	..	2	..	..	1	1	..	..	..	..	..
Wisconsin College of Physicians and Surg..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..
Total.	438	20	508	219	123	235	49	81	85	325	14	1860	82	560	1051	599	717	372	199	389	1202

of medical instruction, each course of at least six months' duration, no two courses of which shall have been in the same calendar year.

SEC. 6.—Colleges, members of this Association, are free to give to students who have met the entrance requirements of the Association additional *credit for time* on the four years' course as follows: (*a*) To students having the A.B., B.S., or equivalent *degree* from reputable literary colleges, one year of time; (*b*) To graduates and students of colleges, of *homeopathic or eclectic* medicine, as many years as they attended those colleges, provided they have met the previous requirements of the Association and that they pass an examination in materia medica and therapeutics; (*c*) To graduates of reputable colleges of *dentistry, pharmacy,* and *veterinary* medicine, one year of time.

SEC. 7.—A college not giving the whole four courses of the medical curriculum, and not graduating students, but otherwise eligible, may be admited to membership.

THE SOUTHERN MEDICAL COLLEGE ASSOCIATION.

The following extracts from the Constitution show regulations controlling matriculants and fees:

ARTICLE IV.

SECTION 1.—Every student, before being matriculated for the first course of medical lectures in any college belonging to this Association, shall be required to possess the following qualifications:

SEC. 2.—He shall hold a certificate from some known reputable physician, showing his moral character and general fitness to enter upon the study of medicine.

SEC. 3.—He must possess a diploma of graduation from some literary or scientific institution of learning, or a certificate from some legally constituted high school, general superintendent of State education, or superintendent of some county board of public education, attesting that he has been regularly examined and is possessed of at least the educational attainments required of first grade teachers of public schools, or a certificate that he has passed the entrance examination to a State University; and a student may be given one month, from the date of his admission, to submit his certificate of qualification.

* Amend Section 2, Article 4.—After the word "certificate" in the first line, insert "duly sworn to."

* Further amend Section 3, Article 4.—After the word "certificate," in the fourth line from the top insert "duly sworn to;" and after the word "University," in the fourth line from the bottom, insert "or other collegiate institution."

SEC. 4.—A set of tickets showing that the holder has attended one full course of medical lectures in any regular and recognized medical college shall be essential for matriculating for a second course of lectures in any college belonging to this Association; and every student prior to matriculating for a third or fourth course of lectures, shall be required to show, by similar evidence, that he has previously taken two or three courses of lectures.

* Amend Section 4, Article 4, by marking the first paragraph "a," and by adding to this paragraph at the end the following: "The minimum per cent. of actual attendance during any session requisite to credit a student with a full course, shall be 80 per cent. of the collegiate course; and a certificate of such attendance, signed by the Dean or Secretary, shall in all instances be promptly furnished by the college so attended." Amend this Section still further by adding paragraph "b," as follows: "Students shall be examined at the end of the first, and every succeeding year, on the studies of the year, and shall be graded. If a student fail on any of the studies of the year he shall not be credited with a full course, but only with the branches that he has passed successfully. He must be examined on every subject upon which he may have passed an unsatisfactory examination, during the ensuing session, at a time determined by the Faculty.

SEC. 5.—The following classes of students may apply for advanced standing and obtain it, provided every applicant undergoes a satisfactory examination upon every branch below the class desired to be entered:

(*a*) Graduates of Dentistry, of Pharmacy, and of Veterinary Medicine.

(*b*) Graduates and matriculates who have completed one or more courses in Colleges of Homeopathy and of Eclectic Medicine.

(*c*) Graduates of recognized colleges and universities who have completed therein prescribed courses in elementary branches of medicine, including chemistry and biology.

* Amend Section 5, Article 4, by adding paragraph "c" as follows: "Any legally qualified non-graduate practitioner of medicine may be admitted into the second year on passing a satisfactory examination on all of the studies of the first year."

SEC. 6.—The same charges shall be made in each of the courses, except where students are exempt from dissection and from laboratory work by reason of having performed the same before, and are not candidates for graduation; and colleges shall enforce and collect their published rates of charges, except in cases deserving reduction on account of the demands of worthy and deserving charity, and such cases shall not exceed 7 per cent. of the whole number of matriculates of the previous session. This law shall not apply to endowed institutions, whose benefactions are confined to their own State; or to colleges receiving State appropriations, or whose charter privileges compel them to give free scholarships to students of their respective States.

The following is recommended as the minimum rate of charges allowable by colleges belonging to this Association:

Matriculation Fee	$5.00
Professors' Tickets	75.00
Anatomical Ticket	10.00
Laboratory Courses, each..................	10.00
Graduation Fee	25.00

* Amend Section 6, Article 4, by striking out the following: "Except in cases deserving reduction on account of the demands of worthy and deserving charity, and such cases shall not exceed 7 per cent. of the whole number of matriculates of the previous session."

INTERCOLLEGIATE COMMITTEE OF THE AMERICAN INSTITUTE OF HOMEOPATHY.

Under date of Sept. 10, 1901, Dr. George Royal, Secretary of this organization, says: "Every college which secures admission to the Intercollegiate Committee of the American Institute of Homeopathy, must present evidence that they have complied with the requirements of the State Board of Health in their state, or, if there is no such board, then of those of the State Board of the state nearest them. They must show that they teach the principles of similia and agree to be regulated by such rules as the Committee has or may formulate. The following colleges are now in good standing: Denver Homeopathic Medi [illegible] .. Hospital College, San Francisco; Chicag .. [illegible] College; Hering Medical College; Dunham [illegible] .. mann Medical College and Hospital, Chicag [illegible] .. Department University of Iowa; Southwes [illegible] cal College, Louisville; Boston University School of Medicine; Southern Homeopathic Medical College, Baltimore; Homeopathic Medical College University of Michigan; Homeopathic Department University of Minnesota; Hahnemann Medical College of Kansas City University; Homeopathic Medical College of Missouri; New York Medical College and Hospital for Women; Pulte Medical College; Cleveland Homeopathic Medical College; Hahnemann Medical College and Hospital, Philadelphia."

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* Amendments proposed at the last meeting, but not yet acted upon.

Michigan.	Minnesota.	Mississippi.	Missouri.	Montana.	Nebraska.	N. Hampshire.	New Jersey.	New Mexico.	New York.	Nevada.	N. Carolina.	N. Dakota.	Ohio.	Oklahoma.	Oregon.	Pennsylvania.	Rhode Island.	S. Carolina.	S. Dakota.	Tennessee.	Texas.	Utah.	Vermont.	Virginia.	Washington.	W. Virginia.	Wisconsin.	Wyoming.	Foreign.
1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	51	..	..	..	..	..	..	..	..	..	7	..	..	..	4
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	27	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1	..	1	4	..	1	1	32	..	24	..	5	..	21	..	2	347	6	3	..	2	4	3	1	4	2	3	4	..	10
..	3	..	..	..	1	1	38	..	12	..	..	..	6	..	1	159	..	1	..	..	2	..	..	1	..	..	..	..	4
1	2	1	2	..	2	1	59	..	26	..	7	1	29	..	3	428	1	3	1	1	5	4	1	3	1	9	1	1	13
..	..	..	..	..	..	..	..	..	..	..	..	..	4	..	..	331	..	1	..	..	..	..	..	..	..	..	..	..	1
1	..	2	1	1	..	1	13	..	13	..	..	..	1	..	..	89	..	1	..	..	..	..	2	4	..	1	1	..	9
..	1	..	..	1	..	2	27	1	13	..	2	..	3	..	..	300	2	2	..	..	..	1	1	..	2	..	..	1	13
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1	..	8	1	1	..	..	..	..	1	..	21	..	..	3	..	1	..	5	..	63	23	1	..	3	..	3	1	..	..
..	..	20	..	..	..	..	1	..	2	..	2	..	..	..	..	..	..	3	..	83	18	..	..	..	..	..	..	..	1
..	..	33	11	..	1	..	..	..	..	..	2	..	3	1	..	1	..	9	..	46	16	..	..	..	..	..	1	..	5
1	..	205	17	..	..	..	..	..	..	..	1	..	..	4	..	..	..	4	..	86	174	..	..	..	..	..	..	..	..
..	..	19	2	..	..	..	6	..	5	..	11	..	3	1	..	8	..	12	1	26	14	..	..	18	..	2	..	..	6
1	..	..	..	..	..	..	..	..	..	..	23	..	1	..	..	..	..	..	..	59	..	..	..	3	..	..	..	..	..
..	..	34	..	..	..	..	..	..	..	..	7	..	..	..	..	..	..	2	..	66	18	..	..	..	1	4	..	..	1
1	..	16	3	..	..	..	..	..	..	..	2	..	1	2	..	..	..	..	..	94	14	..	..	1	..	..	..	..	1
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..	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	39	..	..	..	..	..	..	..	..
..	..	..	1	..	..	19	2	..	23	..	..	..	..	..	..	3	3	..	..	..	..	..	70	..	..	..	..	..	..
..	1	..	..	..	..	..	3	..	5	..	42	..	1	..	..	4	..	1	..	1	..	..	..	144	..	14	..	..	1
1	..	..	3	1	..	..	1	2	..	4	..	4	..	..	..	..	1	..	3	4	..	8	..	..	112	1	3	..	1
4	2	1	..	..	..	..	..	..	1	..	..	1	1	..	..	1	..	..	..	..	..	..	..	..	..	..	162	..	1
..	2	..	..	..	..	..	..	..	..										..	..	..	..	..	..	..	..	122	..	..
745	525	478	1192	43	289	113	331	5	1286																				

NOTES.

The population given of both city and state is that of the last United States census (1890).

In estimating the time necessary to complete a course of study, the number of weeks in the table should be multiplied by four, except for the three-year schools.

There are but two colleges in the country that do not claim a four-year course, these being the North Carolina Medical College and the Sewanee (Tenn.) Medical College.

Last year an attempt was made by THE JOURNAL to cover the ground in the same manner as has been done this year, but at that time without success as regards certain of the statistics, and that special number was therefore given up. The number of graduates for the school year 1899-1900, however, were obtained, correctly we believe, and were as follows according to states:

Alabama, 56; Arkansas, 8; California, 146; Colorado, 44; Connecticut, 24; District of Columbia, 78; Georgia, 153; Illinois, 681; Indiana, 62; Iowa, 91; Kansas, 49; Kentucky, 166; Louisiana, 118; Maine, 32; Maryland, 262; Massachusetts, 212; Michigan, 228; Minnesota, 69; Missouri, 501; Nebraska, 38; New Hampshire, 30; New York, 436; North Carolina, 20; Ohio, 315; Oregon, 16; Pennsylvania, 502; South Carolina, 43; Tennessee, 600; Texas, 40; Vermont, 40; Virginia, 140; Wisconsin, 39. A total of 5239.

About fifteen colleges were not included in the above, but at the outside these did not graduate over one hundred men and possibly not half that number. We estimate seventy-five and believe this is within fifteen of being correct. This number added would make the total number of graduates for last year (1900) 5314, against 5444 for this year.

There were 23,846 students registered at the regular colleges during the year ending July 1, 1901; 1683 at the homeopathic; 664 at the eclectic, and 224 at the physio-medical and nondescript—a total of 26,417.

There were 4879 graduates from the regular colleges; 387 from the homeopathic; 148 from the eclectic, and 30 from the physio-medical and nondescript—total M.D. degrees conferred during the year, 5444.

There are in all 5,958 teachers in the medical schools of this country.

There are 10 medical colleges located in towns of less than 10,000 inhabitants; 24 in towns between 10,000 and 50,000; 11 in towns between 50,000 and 100,000; 36 in towns between 100,000 and 250,000; 28 in towns between 250,000 and 500,000, and 45 in towns of more than 500,000 inhabitants.

The following states and territories have no medical colleges: Arizona, population 122,931; Delaware, 184,735; Florida, 528,542; Idaho, 161,772; Indian Territory, 392,060; Mississippi, 1,551,270; Montana, 243,329; New Jersey, 1,883,669; New Mexico, 195,310; Nevada, 42, 335; North Dakota, 319,146; Oklahoma, 398,331; Rhode Island, 428,556; South Dakota, 401,570; Utah, 276,749; Washington, 518,103; West Virginia, 958,800, and Wyoming, population 92,531.

In the Table indicating homes of students, those marked foreign include Canadians. This will explain the number in the "foreign" column, in certain colleges located near the border; for instance, Detroit College of Medicine registers fifty students from the Province of Ontario, and Saginaw Valley Medical College has fourteen students registered from the same province.

CANADA.

The Dominion of Canada, with a population of 5,335,055, distributed through seven provinces and the Northwest territories, an area which reaches from the Atlantic to the Pacific, contains only 12 medical colleges. Of these, 5 are situated in Ontario, 4 in the province of Quebec, 2 in Nova Scotia, and one in Manitoba. One of the five colleges in Ontario is merely a teaching body; it does not confer degrees, since it is not in affiliation with any university. The distinction between university and college in Canada is definite, namely, the latter is a teaching body only and has no right to grant a degree. The announcements of the following institutions were not received: 1, Faculty of Medicine, Queen's University, Kingston, Ont., and 2, Manitoba Medical College, affiliated with the University of Manitoba. The course of the latter is four years of eight months each.

Toronto, Ontario.

University of Toronto, Medical Faculty.—All the lectures and demonstrations of the 1st and 2d years are given in the laboratories and lecture rooms of the University; *more than two-thirds* of the instruction in the 3d and 4th years are given in the wards and in the pathological and clinical laboratories. A 5th year is now demanded by the Ontario Medical Council, for which provision will be made. Clinical instruction is given in the Toronto General Hospital, Mercer Eye and Ear Infirmary, Burnside Lying-in Hospital, Hospital for Sick Children, and St. Michael's Hospital. Before commencing students must satisfy, as to qualifications, the College of Physicians and Surgeons of Ontario (Provincial Board). Fees are: Registration (payable once), $5; each of the first four years, $100; fifth year, $50; for the degree of M.B., and M.D., each $20. Number of students registered last session, 339; graduates, 52. The 15th session, since the re-establishment of the Medical Faculty of the University, will commence October 1.

Trinity Medical College.—This college is in affiliation with Trinity University, the University of Toronto, Queen's University, and the University of Manitoba. It is situated in Toronto. Toronto General Hospital, Hospital for Sick Children, St. Michael's Hospital, Burnside Lying-in Hospital, and the Eye and Ear Hospital are open to the students for clinical instruction. The entering candidate must pass the examination required by the Provincial College of Physicians and Surgeons. The fee for each session of eight months is $100, exclusive of fees for examinations and hospitals. Matriculates during last session were 157; graduates, 37. The 31st "consecutive winter session" will begin September 25, and continue for eight months.

Ontario Medical College for Women.—This college is located in *Toronto*, and is *not* empowered to grant degrees in Medicine, but it qualifies students fully to take the examinations in any University. The college requires no certificate of matriculation examination, but will accept that of the university selected by the student. The fee for each year is $100, exclusive of all hospital and university fees. The number of undergraduates last session was 339; graduates, 52. The 18th session will open Septembr 17 and continues for eight months.

London, Ontario.

Medical Department of the Western University.—This college makes use of Victoria Hospital for its clinical work. The fee each year is $90, and $25 for graduation. The requirements for matriculation are those demanded by the College of Physicians and Surgeons of Ontario, and the full course is one of 5 years. The matriculates of last session were 77; graduates, 13. The 20th session opened September 10.

Montreal, Quebec.

University of Bishops College, Faculty of Medicine.—The course leading to the degree of C.M., M.D., extends over four years and consists of 4 sessions of six months each, and three summer sessions of three months each, only one of which is compulsory; the faculty strongly recommends attendance upon the three summer courses. Students who require the Quebec license will be given an extended course to comply with the provincial laws. The Montreal General Hospital, Royal Victoria, Western Hospital, Hotel *Dieu Hospital* and Women's Hospital *afford opportunities* for clinical instruction. Students must, on commencing, satisfy the Provincial Board as to their preliminary qualifications. The fee for the first year is $81; second year, $84; third year, $86; fourth year, $74, and summer course, $25, and degrees, $25. During last session the students numbered 106. The 31st annual session will commence October 1.

McGill University, Faculty of Medicine.—This college has a course of four years of nine months each. The total fees for the course are $500. Clinical instruction is given in the Montreal Gene [illegible] Victoria Hospital, and Montreal Maternity [illegible] except university graduates in arts, must pass [illegible] amination required by the Provincial College of Physicians and Surgeons. Last year's matriculates numbered 490; graduates, 106; post-graduate students, 23. The 70th session will commence September 23.

Ecole de Medecine et du Chirurgie.—This college is the Montreal branch of the Medical Faculty of the Universite-Laval in Quebec. It is a French school and was incorporated in 1845. Its students in all classes now number from 280 to 300 each year.

Quebec, P. Q.

Universite Laval, Faculte du Medecine.—The course consists of four years. The fees for the entire course are $180 and $216, according to preliminary qualifications. The matriculates during last session were 102; graduates, 24.

Halifax, Nova Scotia.

Faculty of Medicine of Dalhousie University.—The course consists of 4 years of 8 months each, and leads to the final M.D. and C.M. examination. Prospective students must pass the preliminary examination of the Provincial Medical Board or a university examination. During last session there were 95 students, of which 14 belonged to the graduating class.

Halifax Medical College.—This college supplies no "preliminary examiners;" students are referred for examination to the Registrar of the Provincial Medical Board,. The course consists of four years of eight months each. The fees for the full course are $300, and $30 for graduation. During last session the students numbered 88; graduates, 12. The 33d session began August 29.

Six Years' Course for the Degree in Arts and in Medicines.—As the number of subjects about which it is necessary for the student to know something has increased during the past years the medical course has gradually been lengthened, the demands upon the student have been greater and the average age at which men enter practice has continually increased. This state of affairs has given rise to a considerable discussion as to whether it is advisable for a young man intending to study medicine to take a preliminary course in arts or sciences. The requirement of such degrees as a condition for entrance at Harvard and Johns Hopkins is sufficient evidence that some of the most progressive and representative members of our profession consider such a course of study not only advisable but indispensable. The poor quality of instruction in our secondary schools is no doubt responsible for the delay of students in entering college, and this has made the average age very high for the student who graduates from both a collegiate and medical course. With improvement in secondary education this state of affairs will be remedied and students will be able to enter upon their professional work at a reasonable age. At present the requirement of the degree in arts and science with a four years' course in medicine is considered too high by many, and various solutions of the problem have been suggested. Certain schools have given credit to graduates in arts and science for studies with a medical bearing taken during their academic courses. Other schools have sought to arrange a schedule of studies which shall give a reasonably complete liberal education in connection with a medical course in a shorter length of time than has been previously customary. Within the past year we have noticed from the announcements of Cornell University, McGill University and the University of Michigan, an arrangement by which students can cover the course and receive both degrees in six years. In Cornell before the establishment of the medical department a number of courses were given in anatomy, physiology, histology, embryology, bacteriology and physics which counted toward the degree in arts. There seems to be no reason why these studies should not be considered general culture courses suited to the student desiring a general education along biologic lines who has not in view the study of medicine. On the other hand, all of these studies are indispensable for the man who is to take up medicine, and if they are taken during the academic course, there is no reason why the medical course should not be shortened by the time required to take them during the academic course. The amount of general culture which the student gets by such an arrangement is about the same that English, French, and German students are now required to have, and while the complete college course with broader culture is desirable if possible, the combination of two courses in six years is a far better arrangement than that the student should not take any college course at all. A number of leading universities have now arranged courses which tend in this direction. For several years it has been possible for the student to obtain the degree in arts at Harvard in three years. The regular course of study at Johns Hopkins is three years, the scientific course at Yale has never been more than three years, and in some colleges and universities the somewhat lower requirements for entrance make the four years' course about the equivalent of a three years' course in other institutions. This shortening of the general culture course is of great importance to the man who must spend at least a year in hospital training as well as four years in the medical school, and we believe that the still more radical change which has been adopted in the universities which we have mentioned might be wisely introduced at other universities. This would not prevent younger men who had the time and inclination from pursuing a more comprehensive course, and it would encourage many men who now go into medicine without the advantage of academic study to try to get this valuable extra two years of training. No doubt the time will come in the future when our medical instruction in the United States will be more nearly uniform in all States, as is the case in nearly all European countries, and this combination six years' course is about what we may expect will be the standard.—*Am. Med.*, Aug. 24.

MEDICAL EDUCATION.

UNIVERSITY WORK IN MEDICINE.

It is no longer necessary for a young man who wants an education first to make the fateful choice between "culture" and professional training. Culture and preparation for a calling in life are not mutually exclusive. Culture that does not prepare for a distinct vocation is a pious fraud. Professional training which does not yield culture is a routine drill in some selected knack. with mind as much as possible left out. Culture that deserves a genuine man's respect is not something apart from the ordinary concerns of life. It is not to be had by withdrawing interest from real work, and devoting attention to a range of thought outside and above and beyond men's practical pursuits. What we really want to express when we praise culture is respect for well-developed, well-balanced, and well-adapted human capacity. There can be no culture which does not consist in doing something well. If there were only one sort of thing which is worth doing well, there would be only one possible culture. As there are innumerable kinds of career. all necessary to progressive human happiness, there are equally numerous possible cultures. The cultured man is he who is not merely mechanically fitted to a social function; but he whose thoughts and feelings work intelligently and harmoniously out into the whole process of life, from the point where his own part has to be done. To fit men for life by fitting them for something different from their life, is an ideal that would be grotesque if it had not so long been sacred. To fit a man for life by giving him insight into the most and best possible in his part in life, and zeal to realize that conception, is the sane and social ideal worthy to guide educational programs.

All this is old and familiar enough. It has ranked. however, as contemptible heresy. It is getting to be practical orthodoxy. It is too much to say that educational authorities have modified their verbal formulas to this extent, but actions still have the most prophetic voice, and the logic of events is arguing the case for rational education almost as fast as the most eager could wish.

With more specific reference to medical education it may be said that there are two contrasted types of demand which medical instruction might be planned to supply. The first may be suggested by supposing the case of a young man who says to himself: "I want to get out of life all there is in it for myself, and I want to do it by means of the medical profession. I want, therefore, to get, in the shortest possible time, all the medical information that I can turn to my uses." The other demand may be put in the form of an imagined expression of the general public interest: "We want a proper quota of men of first-rate natural endowment, to make protection of health their special function. We want them to acquire knowledge, and to develop judgment and skill to the limit of their capacity. We want them to bring all the resources of preventive and remedial medicine to the service of their fellows."

The history of quackery need not be called upon for proof that with very little education, involving practically no culture at all, men are able to achieve notorious successes in satisfying the former type of demand. The ideal of the medical profession is distinctly of the other type. The man who enters into the spirit of the profession wants to be the sort of man that the interests of society require him to be. His education should be of the kind which will do the most to satisfy the general need.

Medical instruction in the universities is adjusting itself very rapidly to these perceptions. The ideal of the scholar is knowledge of everything in its relations. When "pure" scholarship controls educational programs they tend to meander off from concrete affairs until the typical scholar is so interested in everything in general that he is good for nothing in particular. The ideal of the practical man, on the contrary, is ability to bring something specific to pass. When this aim controls education it tends to make trade-schools—places where men learn to turn out piecework of a prescribed pattern. The trade may be preaching or teaching or lawyering or doctoring or carpentering. In effect it is, in either case; rule of thumb work. The union of the technical school and the university provides the best conditions imaginable for proper balance between these tendencies. No knowledge or skill would be absolutely worthless to a medical practitioner or investigator. There are, nevertheless, many kinds of knowledge and skill that would cost a member of the medical profession much more than they are worth. On the other hand, the physician can hardly know too much about his own profession, yet he may concentrate his attention so exclusively upon technicalities as to miss many other things that would make him a more effective man. Every professional man has to fix on a working program between the two extremes. The medical curriculum in our universities is the best proposition that scholars and practical men together can offer at present toward a balance of the different claims.

There are just as sharp differences of opinion as ever among university men about fundamental theories of higher education, but whatever individuals think about the matter the universities are actually moving ahead, as fast as they can see footing for next steps, toward solving the problems of reasonable ratio between the more and the less essential in medical training.

With variations both of kind and degree for latitude and longitude and social stratum, the people with whom American physicians practice demand of the medical profession, and are sure to demand more and more, certain attitudes and habits of mind and certain sorts of information which, whether rightly or wrongly, are regarded as credentials of education. This fact requires at least a certain minimum of attention to those subjects which tradition has pronounced cultural. The physician is a man among men, a citizen among citizens. Not alone in his general relations to the state, but as a frequent incident of his professionl duties, he is called upon for knowledge and judgment about business and law and government. It would be an abortive scheme of education that would omit the rudiments of industrial and civic economy. All the special knowledge which the physician must use consists merely of more particular cases which fall under the general laws of matter. Of course, he must be initiated at least into all the physical sciences. He must know the logic of scientific reasoning, the methods of scientific discovery, and some of the more important results of physical, chemical and biological research. It is not absolutely necessary to read French and German in order to be a progressive physician. It is a prodigious convenience at any rate, and if one wants to be sure of ability to keep among the best informed in his profession he must acquire those languages. The universities are not building a trocha around the medical profession when they propose a program of medical study based upon a foundation which includes all these elements. The standard thus established is justified not by an arbitrary theory of culture, but by calm calculation of the demands which a physician's proper functions must satisfy. In other words, the university influence in medical instruction brings into the curriculum those non-essential factors which a strictly professional training would ignore. These are in some respects more important to the fully equipped physician than the reputed essentials.

The university element assures one more capital factor in medical education. It guarantees that the knowledge which the student gets shall look toward science, and not stop with mere information. The old culture superstition located educational values in certain high caste subjects. We now find culture values not in the things known, but in the way they are known. To know anything in its connections is to be on the way toward all the culture possible. Perception of the relations within things and among things is science. The conduct of medical studies by the universities involves methods which will put the most technical details in scientific organization. Facts will be traced to principles. Phenomena will lead back to laws. Objects and occurrences will get their proper setting both in the genetic series and in the functional organization to which they belong. In the universities, therefore, technical training becomes more precise because it is cultural, and culture becomes more genuine by working out to technical values.

If the physician can not see his facts as they are, and can not draw correct conclusions from pertinent evidence, his failures have more direct and serious consequences than those of any other vocation. When we consider the gravity of the services which society expects of medical men, the highest standard for their education can seem neither too liberal nor too severe.

ON RESEARCH WORK FOR UNDERGRADUATES IN MEDICAL SCHOOLS.

One of the questions which the modern medical student sometimes has to answer during his course rather than at the beginning of it is, "Shall I or shall I not as an undergraduate engage in special research?" The question was formerly but little likely to come up. Teachers, as a rule, knew but little and students less of the real meaning of original investigation. Even those professors who had the capacity to undertake it or to guide it were prevented from doing so by the demands of private practice upon their time or the limitations of the equipment of the colleges. Now, that an increasing number of the occupants of chairs in our best medical schools give up private practice and give their whole time to the subjects which they represent, and are appointed to these chairs not only because they can teach, but because they can produce and are capable of guiding productive study, the conditions are very different. The more earnest and ambitious medical graduates attach themselves to such professors and their laboratories and spend a period of time in attacking problems and solving them, for it is coming to be that demonstration of power in some sort of original work is necessary if a man wishes to enter the lists for the higher successes open to members of the medical profession. The enthusiasm of the capable investigator is enormously stimulating and it is but little wonder that young and eager minds coming into contact with it in the medical school or medical department of a university should themselves be fired with the desire of increasing the world's general stock of knowledge instead of being satisfied merely with gaining information regarding the contributions of others.

It seems to us, however, that, under the present conditions of medical education, for the majority of undergraduate medical students research work is not suitable. We recognize fully the influence of research upon development and the importance of gaining as early as possible in one's career the attitude of mind which alone comes through working for knowledge for its own sake in fields before insufficiently cultivated, but in most instances a student, if he is to occupy himself with it at all, does best to postpone until after he has graduated the undertaking of such work. It is but rarely that the undergraduate student is sufficiently prepared for original work. The average student of medicine has quite enough to do to follow faithfully the regular work of the medical course, and if he can do more than is absolutely required without injury to his health he will usually do best to direct his spare energies toward extending his knowledge beyond the confines of what is demanded in one or more of the fundamental branches. If he succeed in urging an unwilling instructor to put him upon a special problem he too often will neglect his regular studies, or injure his health and fall short of success in both. In such instances the student is injured and his instructor's time is worse than wasted.

There are some exceptions to this general rule; medical curricula are of necessity constructed for average students. In every medical school a few students stand out conspicuously as being especially capable, and the tendency is growing to provide more advanced and special courses for such pupils. Among the men of such a group there may occasionally be one who by virtue of unusual mental capacity, or of special training antedating his entrance upon medical studies, is easily recognized by a teacher as a man capable of undertaking research work during the undergraduate period without detriment to the student or to the school. The higher the standard of entrance to the medical school the greater the probability of finding such men in its classes. If a student be asked by a professor in a good medical school to engage during his course in original research, the student will do well to acquiesce; for, in a good medical school the professors should be men who are capable of sound judgment in such matters; and the responsibility will lie with the teacher rather than with the student. Here is applicable as much as anywhere Goethe's admirable maxim:

Vor den Wissenden sich stellen
Sicher ist's in allen Fällen.

If the student has confidence in his teacher he can not do better than temporarily place himself unreservedly in his hands. He should regard it a great honor and privilege to be chosen to engage in original work and his master's confidence in his ability will make him doubly desirous of proving himself worthy of it. If, on the contrary, a student be ambitious to undertake original investigation and the faculty advise him to devote his whole time and energies to the regular work of the school, he will be wise if he be guided by those best capable of judging as to what is best for him.

While it is undesirable for most undergraduates to undertake any special original research which will require a considerable length of time for its completion, there can be but little doubt of the advantages which accrue to medical students who approach the regular work of the medical course by the methods of research. Perhaps as great an improvement as any recently made in medical education has been the introduction of such methods in the teaching of the regular course. The student may be led to acquire knowledge, in territories already explored, more or less according to the methods used by the original discoverers. In the study of law the "case method" of teaching is analogous. In this far, "research work" may be unreservedly recommended to all undergraduates. The responsibility of the proper conduction of such work depends upon the faculties of our medical schools. The method is past the experimental stage and its success is assured. It will no longer do to urge students to gain their principal knowledge from books. The knowledge which a student really makes his own has to be wrested with a certain amount of difficulty from Nature herself. Books and teachers may be good guides to direct the student in his own work; they are too apt to be harmful when more is expected of them. The utilization of the methods of research—personal observation, reflection and experiment—in the ordinary courses of the medical school will reveal many mistakes in current text-books; properly organized such courses may lead after a few semesters to the accumulation of data which will permit of the correction of various errors and so really constitute a collective original research.

If the class system could be done away with, and it is already falling to pieces in some schools, the objections to undergraduate research work would in large part disappear. At present we disgrace a student who does not graduate in medicine in a stated number of years along with the other members of his "class." It is desirable that the student have liberty to prolong his course without disgrace. When some such arrangement has been perfected it might be advisable for the best students to spend six or even more "Lehrjahre" in completing their training in the fundamental branches by Monographic Work in one or more departments. The course followed by Huxley in his own work before 1860 might well be applied to some extent at least in an undergraduate course of a school of the highest order.

It will be noted that while we are of the opinion that the majority of medical students are unfitted, especially during their undergraduate years, for original research, our reasons for this are different from those brought forward by one of our contributors.[1] His principal argument lies in the assumption that the methods of original investigation in the medical sciences are not only fundamentally different from, but actually injurious to, the "medical mode of thought" which is to be used in observing symptoms, arriving at a diagnosis, and deciding upon a course of treatment. But has he any evidence which would indicate that such an assumption is true? Surely every-day experience points to the opposite view and certainly the statements made in his paper can scarcely be regarded as convincing. It is difficult to understand how a training which teaches a man how to think and work independently can be an injury to his future career or how practice in the weighing of evidence and the arriving at justifiable conclusions should lead to unnecessary deliberation and slowness of judgment. Is it not an error, too, to think that research is limited to the determining of new truths of a general character only, and is it not rather the case that the majority of original investigations deal with particular problems in special fields? Only occasionally does that master-mind appear which is capable of new generalizations, justifiably far-reaching. Again, is it fair to consider that work unworthy of the name of research which, though it fail to say the last word upon the problem upon which it is engaged, gathers all the data at the time available, reflects upon them and draws legitimate inferences from them, even when the result is only an approximation to the whole truth? We think not. Indeed, since the time of Heraclitus, our main consolation after ineffectual attempts to reach the absolute has, perforce, lain in the habit of forming relative judgments. Nor will one regard such relative judgments or tentative conclusions as being devoid of responsibility when it is recalled that one of them may lead thousands of men into action under the most serious circumstances. Finally, does not danger lie in ambush on that road which would lead the "medical mode of thought" too far away from the principles which underlie the accurate observation, logical reflexion and judicious experiment which characterize all scientific methodology? It would not be a far cry, it is to be feared, from such a vagabond mode of thought to that "medical intuition" or *das aerztliche Gefühl* which was formerly accredited with the making of brilliant diagnoses, as it were, "by the Grace of God."

We must confess to seeing but little danger of our medical students or of our medical practitioners becoming too scientific. This country demands not only more scientific physicians in whom the people may safely put their trust, but also more medical scientists capable of properly training them. It is gratifying to find that the medical schools of the better sort are making strenuous efforts to supply both urgent needs.

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[1] See page 736.

INDEPENDENCE OF STUDY AND THOUGHT IN MEDICAL EDUCATION.

Twenty years ago, when the course for the medical degree was compassed in two five months' sessions, it seemed essential that every moment should be utilized in lectures and clinics and the day's work uniformly consisted of eight or nine hours of lectures and arena clinics, with two or three hours additional of work in the dissecting room or chemical laboratory, the only practical courses given at that time. No time was left the student for study and reflection and it is small wonder that many of the facts presented eluded his comprehension at the time, and that many of them escaped his memory even before his course was completed. Such a system could not fairly be called one of education, but was rather a mere cramming of information.

The most significant fact in the recent remarkable progress in medical education is not the increase in the requirements for admission, nor the longer time now demanded in the course for the degree; it is the change in the methods of teaching, the great development of the laboratory and of the dispensary and ward clinics, and the subordination of the didactic lecture and the arena clinic, which are no longer deemed the all-sufficient means of training for the medical man. It is the object of medical, as of any other education, to develop and train the faculties that the student may acquire the power to observe closely, to record accurately, and to think logically and clearly along medical lines. The acquisition of information is incidental, and, at best, the amount of knowledge which a student can accumulate in his college course is but a small fraction of the sum total of that knowledge; much of that which he does acquire, of the wisest teacher, he may never use. and it is certain that most of the knowledge which he will use in his practice will be acquired during his post-collegiate career. The great purpose of the medical college life, is, therefore, to educate the student how to observe facts, to acquire information, and how to reason logically and closely in reference to them.

How is he to acquire the ability to observe keenly and accurately? Surely, not by reading or by hearing of the observations of others, helpful as this may be, but by the systematic and constant exercise of his own faculties; hence, the great utility of the laboratory and the small clinic in which he is brought in contact with the facts themselves and not with what somebody else has said or written of them. Likewise, he can acquire the power of clear, logical, sustained thought only by the exercise of his reasoning power, not by a mere description of what others have thought, or by the observation of the teacher, clinical or otherwise.

If these statements are correct then time must be allowed the student for study and reflection outside of the hours scheduled for lectures, clinics, recitations and the other stated work of the curriculum. Adequate time for this purpose is provided in very few medical schools of to-day. Almost without exception the curricula are overloaded, too many hours being demanded for scheduled work. This has doubtless resulted from the manner in which the course of study has been constructed. Each professor, duly impressed with the importance of his own subject, has demanded as much time as he could secure for the work of his department. The result has been not only an overloaded curriculum, but in most cases, one very poorly balanced. The amount of time allotted to any particular branch has depended, not on the relative importance of that branch, but on the comparative persistence and persuasiveness of the professor in charge. Evidence of this need only be sought in the wide variation in the courses of study in our numerous colleges. Branches taught in some are not taught in others, and the number of hours allotted to a particular branch in one schedule may be several times that given to it in another.

An effort was made recently to construct a curriculum on a rational basis, which is of interest in this connection. The faculty of this school having determined that radical measures were necessary, set before itself the following propositions: 1. How many hours daily should the average student be expected to devote to work, both in and out of the college? It was agreed that nine hours should be a maximum for students of the first two years, and ten hours for those of the last two years of the medical course. 2. What part of this time should be allotted to scheduled work in the college, and what part to preparation, reading and reflection, outside? 3. What proportion of the scheduled hours should be allotted to lectures and recitations, and what to laboratory, practical, and clinical work? Considering these two queries together, it was agreed that a one-hour lecture or recitation should receive from the average student two hours of preparation, while a two-hour laboratory, practical or clinical exercise would require only one hour of preparation. Three hours, therefore, should constitute a period, whether for lecture, recitation, laboratory, or clinic, with this difference, that in case of the lecture or recitation one hour of the three would be spent in the class room, in the laboratory or clinical period, two hours, would be so spent. It was further decided that for the first two years an equal amount of time should be assigned to lecture and recitation periods on the one hand and to laboratory periods on the other. If, for example, during a certain portion of the year a student has one lecture, and one recitation daily, involving four hours of preparation, and a two-hour laboratory exercise involving one hour of outside work. during another interval he would have only one lecture or recitation and four hours of laboratory work—a total of nine hours of work daily in either case. During the clinical years a larger portion of the time is spent in scheduled work, the amount of time given to clinics and practical courses being larger, but not less than four of the ten working hours daily are allotted for outside study and reflection.

4. The above propositions having been agreed upon, it remained to determine how much time should justly be allotted to each of the required branches of the curriculum. And this, be it noted, was not ascertained by asking each head of department how much time he felt

that he required to teach his branch exhaustively—that being clearly impossible in any case—but by general discussion and conference, as to the relative importance of the several subjects. It is of interest to note in passing how promptly and amicably this question was settled. Heads of departments, previously insistent upon a large amount of time, when faced with the proposition that after all the student had only a given number of hours at his disposal, readily assented to an allotment of hours fairly proportionate to the importance of the several subjects.

This specific case has been cited to illustrate what seems to us a rational method of constructing a course of study, but the most significant feature of it all is the large amount of time allotted to the student for independent reading, reflection—thinking—outside of the scheduled hours. The medical college is not so much a place where the student is to be taught, but a place where he is to be educated, to be given the proper environment for the growth and development of his faculties. The faculty must abandon the idea that he is a reservoir to be placed upon the benches of the lecture room during his every waking hour and stuffed with facts, and accept the idea that he is an observing, thinking mind whose chief need is an opportunity to grow.

THE ELECTIVE SYSTEM IN THE MEDICAL SCHOOL.

Among the modern pedagogical methods which are being discussed in relation to medical education, is the elective system, now so generally adopted by the leading institutions for general learning in this country and abroad. It may be defined as that method under which a student pursuing a course for a degree is allowed some choice in the studies he shall take, the method by which he shall pursue them, and the teachers who shall instruct him. Election finds its chief *raison d'etre* in the fact that individuals differ widely in mental make-up, not only, and not so much perhaps in reference to the sum total of mental capacity, but in the relative strength of the faculties; some men excel in powers of observation, others in memory, others in imagination, and others in reasoning power, and if it be the object of an education to develop a well-balanced, thoroughly-trained mind, it is obvious that, if there are wide differences in the individuals to be trained, the methods of training must differ in different cases.

The acquisition of information is one of the purposes of a college course, and here, too, there is abundant room for election by the individual student, because of the immensity of knowledge. It is obvious that the amount of information which the most diligent student can obtain of any subject during a college course, constitutes but a fraction of the sum total of knowledge therein. A teacher of anatomy, for example, devotes his life to the acquisition and promotion of knowledge of his chosen subject and finds that life all too short for its mastery. While, it is true, there are certain fundamental facts which every student must be taught, it seems clearly impossible for any teacher to select a group of topics, and to present them by any method which shall be the best possible for every individual student. It may, indeed, be safely asserted that no two teachers of anatomy would agree as to what constitutes an ideal course in that subject for a medical student, and this assertion would hold good for teachers in any other branch. Evidence of this is furnished in the widely diverse character of the courses offered in the various medical schools. This being the case, why should not the individual student, aided by the advice of his teachers, be allowed some choice in the matter and permitted to adapt his course of study to his tastes, his abilities, and his needs?

The fundamental idea of the elective system is then, the adaptability of a course of study to the peculiar needs and purposes of the individual student, and it is the opinion of the best educators that ideal results can be procured in no other way. But there are further advantages in the system. Not the least of these is the increased enthusiasm and interest with which the student pursues his work. The difference in the spirit which animates one who is taking courses of his own election, courses which he has taken voluntarily, and not merely because they were prescribed by the faculty, has been noted by almost every teacher who has had to do with them. This difference in spirit reacts in turn upon the teacher and affords him a constant stimulus to faithful and efficient work. It has sometimes happened that an enthusiastic, progressive teacher, having been promoted to an assured place in the faculty, has begun to show a decline in diligence and effectiveness soon after attaining the coveted place. Sure of his position, certain of large classes, his course being required of every student, a strong incentive to good work is removed. Very different is the situation under the elective system; the pupil being allowed to choose the professor's course, or one of several others, offered by ambitious younger men, perhaps assistants in the department, soon begin to discover that the larger experience and knowledge of the older men are more than offset by the eager enthusiasm and energy of the younger assistants, and presently the professor finds that the attendance upon his course is diminishing. Not less important is the opportunity and stimulus afforded to the younger man. Like the privat docent of the German University, he is placed squarely in competition with others and realizes that his future career is in his own hands, to be determined solely by the ability, capacity for work and efficiency which he displays as a teacher and investigator.

Then, too, the very act of election on the part of the student, his careful consideration of his own needs, and the selection of the courses best fitted to them, constitute an educational resource of no mean value.

The chief objections urged against the elective system are, first, the danger that the student will be inclined to specialize, devoting all, or most of his time to one subject, and second, the expense involved in increased space, equipment, and instructors. The advocates of election insist that these objections are invalid. In reference to the danger of specialism, it is said that election does not necessarily imply unlimited freedom of choice as to the general branches to be taken, but that, if the student be allowed some latitude as to the topics under each branch, as to the method of study, whether by lecture, recitation, laboratory or clinic, and as to teachers, all of the benefits of the plan can be secured. A broad and thorough course can be insured by insisting, first, that each student present before graduation a specified minimum of credit in each general branch; second, that his cards of registration be subject to approval of the dean or other officer of the college, and third, that he be required to pass a thorough, practical examination in each department before graduation. It is urged further that the student's own judgment and common sense are prone to be underrated. The number of those is very few who do not realize the necessity of a good knowledge of all of the branches as a preparation for medical practice.

In reference to the need for larger facilities in the matters of space, equipment, and faculty, the advocates of the elective system reply that these must be provided in any event, if the demands of modern medical education are to be met. The subdivision of large classes into small groups for recitation and conference, laboratory and practical exercises, and especially for bedside teaching, is a *sine qua non* for the proper and adequate training of medical men.

A further advantage of the elective plan is the fact that it opens the way for the utilization, under some such scheme as the extra-mural plan of Edinburgh, of many hospitals where no students are admitted at present. This can not well be accomplished except under some plan by which the members of the staff giving instruction are suitably recognized and students are given full credit for work done.

The elective system has been introduced more or less extensively into a number of medical schools. In the Harvard Medical School the Medical Departments of Columbia University, Johns Hopkins University, the University of Pennsylvania, Rush Medical College, and some others, more or less amount of election is allowed. The plan is so generally in use and has been so successful in the larger institutions of general learning that the experience of those medical schools in which it is being tried will be watched with great interest by all who are concerned in any way with medical education.

VALUE OF THE FUNDAMENTAL BRANCHES.

As soon as the student has satisfied the requirements for admission to the study of medicine in some reputable school he may be said to have "burned his bridges" in a much more accurate sense than obtained ten or fifteen years ago. The matriculation examination is becoming yearly more stringent in the larger number of medical colleges, while the demand that the prospective candidate for graduation shall be a person of broad and liberal culture is now more imperative than ever. Time was when the medical student and his friends regarded the freshman as a sort of experimental bread-winner; if the preliminary canter over the medical course did not please him or was not successful any other race could be easily entered. If the boy discovered that he did not care to be a physician, he could take up the grocery business or go back to the farm. Contrariwise, if he failed in, or for any reason abandoned some other occupation, there was always a convenient, and frequently a complaisant, medical "college" to be entered at short notice. A comparison of the Announcements of the previous decade with the present will readily show how much more difficult it now is than it formerly was to carry out the curriculum, and this difficulty is much more likely to increase than diminish. The time is probably at hand when many of the subjects now taught in the freshman and sophomore years will form part of the student's preliminary education.

The additions thus made have an important bearing on the courses commonly known as the fundamental medical branches—biology, anatomy, chemistry, physiology, etc.—because the student must himself decide whether he will attend a college where the latter are mostly disposed of as a part of his preliminary studies and where, consequently, more time is devoted to purely medical investigations, or whether he will undertake them as a portion of the regular collegiate program. It is not our purpose to discuss this matter here except to point out that the pursuit of one or other plan is probably as desirable for one class of students as it is undesirable for another, and that to the average student it matters little when or where he has received such instruction, as long as he does receive it, before engaging in more advanced studies.

Apart from the ambition that most students exhibit to proceed to the final degree, there is a feeling that the subjects of the earlier years are merely means to an end—a sort of ladder on which to climb and when the top is reached to be flung aside as so much useless lumber. It is a common experience to hear even the senior student, not to speak of the recent graduate, glory in the fact that the elements of histology and chemistry, once so familiar to him, are now but a dim memory of that distant past when he was an unsophisticated freshman. While this declaration is not so frequently heard as in former days when the line of demarcation between biology and pathology was more plainly drawn, yet the feeling that there is a great gulf fixed between the theory of the fundamentals and the practice of the bedside has by no means died out.

Is there any reason why, for instance, human anatomy, or embryology or organic chemistry should not be studied, as an introduction to the practice of medicine, with the same persistence and the same singleness of purpose that seems to be so readily accorded to general surgery? If the fundamentals are really essential to his success as a practitioner and to his growth as a scientific man, it is fatal for the student either to neglect them altogether or to regard them, in his after years, as the cast-off clothing of a medical fashion long outworn and fit only for the garret of his mental storehouse.

Probably one of the reasons why in the past certain fundamental studies failed to appeal to students and practitioners of medicine as essential branches was the short time allowed for grasping all the facts and fancies of medical teaching. When the two or three year student (often defective in a preliminary scientific training) was confronted by the mass of material that then, as now, was set forth for him to learn and digest he, perforce, chose the so-called "practical" studies and rejected the others—singing, meantime, the ancient song:

> "Could a man be secure
> That his days would endure
> As, of old, for a thousand long years,
> What things might he know!
> What deeds might he do!
> And all without hurry and care."

We have not recovered, even with the lengthening of the courses of study and the relegation of some branches to the entrance examination, from this feeling that art is long and life is brief.

This neglect of the fundamental branches, in the choice of studies that the student has felt and still may feel it necessary to make as a burden upon his memory, sometimes results from a notion that a large portion of them is, in some sense, more ornamental than useful, just as many educators still cling to that vague idea, current with our grandfathers, that a more or less intimate knowledge of Greek and Latin forms the chief ingredient in the education of a gentleman.

Yet another obstruction in the path of the student was the manner in which the fundamental branches were formerly and—in some colleges are still—taught. Without denying certain inherent virtues in didactic teaching, there can be no doubt but that the mere memorizing of facts in physiology, anatomy and chemistry presented almost entirely in lectures and textbooks during the freshman and sophomore years furnished the most certain means of forgetting them the year after graduation. The embryo physician at the beginning of the twentieth century has, it is safe to say, no such excuse. There are few, even of the smaller colleges, in which the old-fashioned and uninteresting "knife and forceps" anatomy (furtively studied in a foul and nauseating room) is not replaced by demonstrations, recitations, illustrated by models, dried and moist preparations, drawings from the subjects, etc., all carried on in a clean and pleasant laboratory or amphitheater. A corresponding improvement has also taken place in the methods of teaching all the other primary branches, where the laboratory has displaced the old lecture-room, where the student is trained to observe and to record his observations in a manner that will be of the greatest service to him when he is face to face with diseased conditions in after life.

If we accept, in this connection, Spencer's test and inquire what knowledge is of most worth, it is surely not necessary to argue, for example, that without a knowledge of anatomy, general, regional and pathological, surgery would in practice be about as rational and effective (to quote his words) as if "a merchant were to commence business without any knowledge of arithmetic and bookkeeping. We should exclaim at his folly and look for disastrous consequences. Or if, before studying anatomy, a man set up as a surgical operator, we should wonder at his audacity and pity his patients." In like manner, if a knowledge of anatomy be essential to the practice of surgery it is also required in internal medicine, in medical jurisprudence, in obstetrics, in gynecology—in every condition and walk of medical life.

If the intimate relations of anatomical studies to the more advanced subjects of the curriculum be admitted as an axiomatic truth, the importance of physiology—which may be regarded as including biology, embryology and histology—chemistry, pharmacy, etc., to one who desires a lasting and widening knowledge of every other branch of medical learning can not be gainsaid. But this study of fundamental medicine is not to be pursued simply because it is a help in getting "credits" or because it is useful in passing examinations in the final branches. It represents the scientific part of medicine and it certainly begets that most useful and valuable of all habits—the scientific habit. It teaches the student to try and see things as they really are, and, while exercising a rational skepticism, to give due weight to evidence of the proper kind. This is one reason why a conscientious study, in accordance with modern methods, of the subjects of the first semesters is likely to assist the physician in unraveling the tangles of everyday practice, to enable him to keep abreast of the times as he progresses in all useful knowledge, to distinguish false from true, to reject doubtful theories and to help him from being driven hither and thither by every wind of doctrine. Most important of all, a continued study of them furnishes the index by which his fellow practitioners and—at last—the public decide what kind of physician he really is.

To the student who is just entering on his first work we would say: If you wish to be commonplace in every acceptation of that term the way is easy and medical degrees not so very difficult to obtain. If, on the other hand, you desire to live and work among the worthy and be classed among the best no better preparation can be had than setting upon bedrock and keeping in subsequent repair the foundation stones of our temple of art. Against such a defense, the winds and waves of ignorance of both "regular" and "irregular" charlatanism, of exaggerated therapeutics, and of false pathology, will surely beat in vain.

TEACHING BY RECITATION, DIDACTIC LECTURE, THE AMPHITHEATER CLINIC, THE WARD CLASS.

The four methods by which the practical branches of medicine, surgery, obstetrics and the specialties are generally taught are by recitation, by the didactic lecture, by the amphitheater clinic and by the smaller clinic in the dispensary or ward of the hospital, i. e., the ward class. By these methods, with a little practical laboratory work, the student in his junior and senior years is expected to be drilled in applied medicine so that he will be fitted to engage in practice.

What are the advantages of each of these methods and what their mutual relations? It is frequently said that the didactic lecture should be discarded, that recitations are unnecessary and a waste of time, as the student can learn by reading without reciting; that the clinic to large classes is but a dramatic display, and that teaching should be done wholly to small sections and in the ward or in the laboratory. May it not be that there is something of good in each of these methods and that a too hasty discarding of the one or the other may be detrimental to the best interests of medical education?

If by recitation is meant merely the reciting from memory of certain allotted portions of a text-book, and if the teacher is but a timekeeper who records attendance and marks the student according to the nearness of his approach to repeating the order and wording of the approved text-book, then the teacher is a figurehead, the recitation a farce and an injury to teacher and pupil alike. The true recitation is a conference. The teacher not only listens and criticises, but he invites inquiry; he explains and expounds; he may talk much more than does the pupil; he does not hesitate to call attention to debatable statements in the text-books; he quotes other authorities; he incites his students to look up original articles; he is something far different from a recording clerk who marks percentages showing a student's ability to memorize. And the student under this method of teaching is not only acquiring facts, but is learning how to study. Many students do not know how to read and assimilate a medical article even though it is well written. They fail to put in their proper relations the facts of prime and of subordinate importance. Their conception of a disease is, therefore, a distorted one, its relation to other diseases is misty, the bearing of facts in physiology, pathology and therapeutics upon this disease and its clinical manifestations are poorly appreciated. When such students attempt to tell what they know their failings at once become apparent to themselves and to others. One often thinks he understands until he tries to put his knowledge into articulate or written words. Loose statements made in the recitation do not pass the muster of the critical instructor and the critical fellow-students. Exactness of knowledge and of expression is demanded, and the student makes but a few failures of this sort before he begins to change his habits of study and learns to read, think and express himself clearly and logically.

The proper place for the recitation is at the beginning of the junior year, when the study of the practical branches is first taken up. Before beginning the higher work of the senior year and the study of actual clinical cases there should be a general survey of the subject so that things may be seen in their proper relations, diseases may be grouped and differential diagnoses made understandingly. The study of practical medicine and surgery should not be begun with the oil-immersion lens, but with an objective of lower power and wider field. The recitation course carefully conducted, with properly fitted teacher, good text-books, classes or sections of no more than twenty-five gives this training that is necessary before the student enters upon the more advanced work.

Clinical work is in reality laboratory work. The ward is the laboratory, the patient and the instruments of precision the material; problems are here to be wrought out requiring the same powers of observation, the same collocation of facts, the same logical reasoning, the same precise demonstration, that are required in the laboratory of chemistry or pathology. Every argument elsewhere made for laboratory methods applies to the clinical method of teaching. The closer the student comes to his patient, the more he works out for himself the problem of disease confronting him in a given case, the more firmly fixed in his mind will be the facts thus learned and the better training has he had in independent work. The spirit of original research can easily be developed where students can have ward and bedside opportunities for the daily observation of patients and the comparison of different cases of the same disease, with free access to case records and a consulting library. Instruction in ward classes of six or seven, where the instructor quizzes and expounds, using as a text a concrete case already carefully studied by the members of the class and watched by them for days or even weeks, this is an ideal method of teaching the practical branches.

And there can be no question that this method of teaching more than any other benefits the instructor and keeps him stimulated to do his best. The case must be carefully studied by him before he can intelligently demonstrate it to a critical group of bright senior students. Loose statements will not be tolerated, nor can the teacher in the ward class, as is sometimes done in a clinic and in the arena, draw upon his imagination to fill in the missing symptoms or physical findings that enable him to make out a typical case of some disease. He must demonstrate not what the book says ought to be, but what is actually present.

But what of the amphitheater clinic? Is it wholly useless and to be discarded? As a means of training the student's own powers, of teaching him self-reliance and ability to reach conclusions and to produce independent work it can not be compared with the ward class just mentioned. But ward classes must be small and instructors must be many. From the nature of things in a large school these ward classes can not all be taught by the great physician or surgeon who stands at the head of his department, a man perhaps of world-wide fame, one from whom all the students desire to receive instruction and to whose teaching they are by right entitled. In order that all may learn of him his sections must be larger, fifty, a hundred or more; the amphitheater and not the ward must be the schoolroom. The man selected to give the large clinic should be a man of proven unusual ability in some one direction. He should be either a great operator, an original investigator, a physician of unusually wide experience, or a teacher who has unique ability in imparting knowledge. Such a man can teach a large audience. With a certain class of cases there is much to be learned by seeing the patient even from the distance of the benches of the amphitheater; such as a deformity of a fracture, its method of reduction, and the dressing applied. A tabetic can be well demonstrated as to gait, sensory and motor disturbances to a large class. Further, a class learns much from a careful review of the history of the case and from observing the methods of a good teacher in eliciting a history. The analysis of symptoms, the careful differential diagnosis, the discussion of prognosis are all valuable in the right hands.

The didactic lecturer who repeats the text-book to the class is a thing of the past, or should be. The didactic lecture should be limited to the taking up in detail of special topics, the work as a rule elective; subjects can thus be gone into more fully than is possible in a recitation course and more systematically than in the clinical work. Here, too, the same high-grade teacher is demanded as for the clinic, the man who by his own original work has something new to propound, or who has by an extended study of the work of others made himself master of the subject so that he can speak authoritatively, or who has an unusual ability in the presentation of a topic so that the crooked is made straight and the rough places plain for the student. Especially fitting for the didactic lecture is the discussion of recent work in the different branches of medicine, work that is not yet in the text-book, that is as yet in magazine and monograph. This is the proper field for the didactic lecturer. Merely to repeat the old familiar story that the student has read or can read in the text-book, that has been rehearsed in ward class and in clinic is to waste valuable time.

Recitations lay the foundation; they give the broad view, enabling things to be seen in their proper relations; the ward clinic trains the individual powers of observation, teaches independence of thought, gives manual training and skill in technique; the clinical lecture shows especially the methods of a master in his specialty; the didactic lecture takes up a topic exhaustively and brings the knowledge up to date.

There is a place for all these methods of teaching the practical branches, and where the work is properly divided, where instructors are not mere automatons, but wide-awake teachers; where the professors are experts as well as teachers, students should get a training enabling them to go out and become not only successful as practitioners of medicine, but successful as students in continuing their studies by themselves, their zeal in the pursuit of knowledge keeping them abreast of the times for many decades after they have been graduated and in spite of the cares and exactions of a busy practice.

CHANGES IN OUR MEDICAL SCHOOLS NECESSARY TO MEET MODERN CONDITIONS.

It is difficult to take the part of a prophet and it is thankless to take that of an adviser. There are, however, some changes which nearly all agree are coming to our medical schools, here earlier and there later, but eventually everywhere. The most important of these is the elective course. This system seems to be necessary on account of the enormous overgrowth of the curriculum and of the necessity of more thorough and more individual work. It gives the greatest possible liberty to the teachers and to the students alike. It eliminates by the law of the survival of the fittest the antiquated and the careless teachers. It makes the fictitious differences in professorial titles null and void, and it gives the active teacher immediate and effective recognition. It makes all changes in methods of study and institutional management easy.

The architecture of the medical school must be modified. Heretofore a single roof has been broad enough to house the medical college. It is not so any longer. There must be an anatomical institute, an institute of pathology as well as a hospital to make an effective medical school. One roof and even one location is not enough. Perhaps one faculty is not enough, but several faculties may be necessary to the coming medical education—one working in one part of the city or country and one in another—but all co-ordinated by the unifying and correcting action of the student's privilege of election under the guidance of his dean.

Extramural or non-resident teaching promises to increase greatly the facilities for education. In no way can adequate obstetric teaching be secured except by dividing the students among scattered lying-in hospitals and dispensaries. The same may be said of medicine and surgery, of the various specialties and of that intimate dependence between patient and student so necessary to his best interest and success. The medical school that shall achieve the widest success will be the one that allows its students the greatest liberty in selecting their teachers and places of study, still giving credit and ultimately a degree on evidence of work done.

In the coming medical school the social and esthetic life must be more fully satisfied. The buildings and furniture should take on dignity and beauty if they are to bring out the best in thinking men in the four years or more they are in use. There must be appropriateness and beauty in the lecture rooms and library, in the laboratories and assembly hall. The physical needs of the students must be met in the gymnasium and perhaps in a common dining-room or in clubhouses. Lectures laboratories and libraries are not enough to educate a medical profession which shall command the esteem and receive the economic tribute of modern society. Our medical students need all those helps to social life and esthetic culture which the university finds itself obliged in modern times to offer. Consider the activities of the university, and the needs of the medical school are counted. The club, the fraternity house and the common dining-hall; the dormitories, the gymnasium and the open playground; the esthetic decorations of the buildings, grounds, audience rooms and study rooms; the assembling of the broadest, most enthusiastic and most masterly scholars; the cultivation of all that is earnest, refined and devout in the student body—these and much more that these things stand for, are before the administrators of our medical schools for utilization.

Medical schools must become imbued with a more scientific and democratic spirit. Into the management of the school must come not only the influence of every member of the intramural and extramural faculty, but the student body must be well represented in the educational councils of the college. Only so can the dwarfing influence of vested interests and of antiquated ideals be overcome and the modern spirit of individual, active, life-imbuing education be given free course.

THE PLACE OF TEXT-BOOKS IN THE MEDICAL CURRICULUM.

It may be set down as a proposition from which there will be no dissent that every agency should be availed of that will contribute to the better comprehension and application of the science and art to which the medical student dedicates his life, and that will help to make him a more intelligent and a more practical physician. All education should have for its ultimate object not merely the imparting of knowledge, but even more, its successful and practical application. This end can be attained in divers ways, and while not a little depends upon the teacher and his methods, far more depends upon the pupil.

Discussion has recently waged about the part that the didactic lecture should play in the medical curriculum, and there has been a sort of frenzy with regard to the place that should be given to laboratory teaching. A sober judgment will decide that each of these has its own peculiar value, and that a better result will be secured from a judicious combination of the two than by any undue preponderance of the one over the other. Nor are all of the requirements yet fulfilled by these means. It is not possible in any course of medical instruction, however complete, to cover the entire field in all of its details, and this unavoidable deficiency must be made good by the use of text-books. This has a further advantage in stimulating intellectual activity and growth and developing intellectual independence, as well as in broadening the mental view and strengthening the mental grasp. As compared with the artist's picture, didactic, clinical and laboratory instruction may be considered as furnishing the sketch or outline, the details of which must be filled in by ample and judicious reading. It is a physiologic axiom that an unused organ atrophies and an unexercised faculty becomes enfeebled, and the brain and the intellect are better developed for being given a certain amount of pabulum to assimilate, in addition to that which it receives from the teacher, as it were, in a predigested form. The text-book, therefore, remains an important adjunct in the medical curriculum, its use in its place should be encouraged and we would commend especially the use of those that deal fully, comprehensively, and in a detailed manner with all the phases of the subject with which the student should be familiar, rather than the more concise and condensed presentations which may be committed to memory, and do not form a strong foundation upon which a worthy superstructure of knowledge may be built.

The several elements of a thorough system of medical education, including didactic lectures, clinical instruction and laboratory teaching, and the collateral use of text-books may be compared to the constituent factors of chromoscopy, or colored photography, of which if any one be wanting an uncolored picture results instead of the naturally-tinted reproduction.

WHAT DOES THE PRACTICE OF MEDICINE OFFER AS A LIFE WORK?

Under the present status of medicine in this country, what has medicine to offer as a life work? To the student deficient in preliminary training, and who must, in consequence, enter the only schools which will receive him, namely a poor one, the outlook is bad. Such a student begins the study of medicine with the idea of gaining a livelihood only. He has no conception of medicine as a science; no pleasure in the investigation of the many problems which confront the physician; only a half knowledge of the responsibilities of his calling; he can have no pleasure in scientific discussion and in fellowship with the best men of the profession; he will exist without social standing among the educated and cultured people of the community. He enters medicine to gain a livelihood, and he will find that his investment was a poor one.

To-day the status of medicine is such that he who would meet success must have a good preliminary education. The discipline of mind, the broad culture of a college education would be of great assistance to the student and to the practitioner. But if the student has not this training he should be able, as a minimum preparation, to pass the entrance examination of a good university or college. In addition, a reading knowledge of French and German is very essential to-day.

To a student so prepared who will spend at least four years in honest work in one of our best medical schools, and supplement the medical course with a service of one or two years on the house staff of a hospital, medicine offers much.

To a physician so educated, who is energetic, painstaking, and thorough in his work and whose integrity is unimpeachable, medicine offers more than the law, theology or politics. As a practitioner his life will be full of the most laborious and exhausting work. He will be much exposed to inclement weather, at all seasons of the year. His duties may interfere with his social and material pleasures. His sleep will be broken by calls to the suffering.

But to offset the discomforts which experience and fortitude lessen until he no longer considers them, he has the robust health and sturdy character which open-air exercise and the constant battle with and frequent mastery of the fell destroyer bring him. In the city his duties may fall in more pleasant lines of work, for a metropolitan practice is attended with less physical discomfort than is that of a country practice.

Wherever located, a good physician has no idle hours. Work—good, well-directed, persistent work, such as a properly educated physician knows how to do—will distinguish him from the indolent and ignorant in medicine, as it will in all walks of life. Medicine to-day offers opportunities for work as it never has in the past. For him who knows how, there are many problems to be worked out. The alleviation of human suffering, and the prolongation of life are subserved not alone by attendance upon the sick but by every measure which will enable us to discover the cause of and prevent disease. Much remains still to be investigated, and it lies within the province of the practitioner, quite as much as in the field of work of the pathologist, to make scientific observations and experiments. The intellectual life of such a man is full. He has the pleasure of constant intercourse with scientific, broad and cultured people. His work gives him but little time for the so-called pleasures of society. But he is a factor in the community, honored, respected and loved by all who know him. Such a man working unselfishly, doing good work because he is interested in it, and not because he expects a fee for it, will perhaps not become wealthy. He will, nevertheless, have a sufficient income to make a comfortable home and lay by enough to keep him and those dependent upon him when old age shall have come.

There never was a time in the history of the world, probably, when medicine gave as much promise to the student of a successful career, as now. But he who takes it up as a life vocation, from sordid motives, or who is poorly prepared and improperly educated, will meet defeat in competition with the man who is a physician because he wishes to benefit mankind. The true doctor is a nobleman. Carlyle said of the profession: "He that can abolish pain, relieve his fellow mortal from sickness, he is indisputably usefullest of all men. Him savage and civilized honor. As a lord chancellor, under one's horsehair wig, there might be misgivings; still more so, perhaps, as a lord primate, under one's cauliflower; but if I could heal disease I should say to all men and angels without fear, En Ecce!"

THE MEDICAL COLLEGE ASSOCIATIONS AND THEIR INFLUENCE ON HIGHER STANDARD OF MEDICAL EDUCATION.

The progress of medical education in the United States is one of the most remarkable phases of modern culture which has been observed during the past fifteen years. For the motives of this progress we are obliged to look in various directions: to the enormous increase in wealth which has marked our mastery over the physical resources of the earth through modern machinery: to the equally unexpected increase in our knowledge of diseases through the general scientific advancement, and lastly, to the coincident revival of a science or art of pedagogy. But aside from these general motives which underlie the progress of medicine as a whole, the course of progress in medical education and its most remarkable unanimity throughout the whole United States is in a peculiar measure due to the influence of the Association of American Medical Colleges, and its sister organization, the Southern Medical College Association. These bodies have kept the various rank and file of medical colleges in step and up to time. There have been leaders and scouts far in advance of the general body, but the great bulk of reputable colleges have been kept near these leaders by the unifying influence of these Associations, seconded by the hearty support of the various State Examining and Licensing Boards.

Through the influence of these pedagogic Associations, we have a gradually advancing standard for our professional education which is unparalleled by any similar growth in law, theology or schoolmastery and equaled only by that of dentistry and pharmacy. The preliminary requirements are now about those of the second year of the high school, but fortunately many, perhaps one-fourth of the eighty schools united in these bodies, are one or two years in advance of this minimum. The course of study now covers four years, and this is probably the maximum of required intramural study.

In attaining these ends the Associations have acted very cautiously and very firmly. These two objective points have been held firmly in view, but topics of general pedagogic interest have not been neglected as a reference to the proceedings of their meetings show.[1] The "Syllabus" was the work of three educational conferences and contained information and detailed instruction which saved much expensive and discouraging experimentation in the rapid change from a two-year to a four-year graded course. Later the establishment of medical libraries was encouraged and directed and the elective system was advocated. At each meeting numerous papers on medical pedagogy were introduced and the discussions were active, interesting and valuable. Delegates went home with added enthusiasm for better and more ideal work. Some radical and revolutionary papers in the early meetings of the Associations have been lived up to by the faculties of all the members and now the ideals of these iconoclasts are held as fundamental.

The work of these Associations has been so quiet and unpretentious, so full of argument and persuasion and so lacking in contention and compulsion that were it not for its depth and vigor it would attract little attention. A few of the leading colleges have never entered either Association. Three colleges have for one cause or another resigned, and two colleges have been expelled. Eight colleges have been denied membership. Out of 125 regular medical schools about 80 hold active membership in one Association or the other. There are now only five or six schools outside this membership which maintain a standard equal to the required minimum. It would seem as likely that all medical schools would find it to their advantage pedagogically and socially to unite into one helpful association as that literary colleges and even high schools have done so.

There is every evidence in the combined meetings of the two Medical College Associations which have been held during the last three years at Columbus, at Atlantic City and at St. Paul, and by the action taken in both Associations at their last meeting, that some union is likely to take place during the coming year. Nothing stands in the way except slight differences, which are rapidly passing away. The work of the Associations *hereafter will* be almost entirely pedagogic. Such great changes as medical education has suffered has been attended by much crudity and lack of system. The methods, purposes and motives of clinical and laboratory teaching and the general coördination of the whole curriculum is the work of much individual and collective labor. Let the Associations lay aside their differences and their legislative action and attend to this great problem on which so much of the honor and credit of our profession depends.

AN OVERCROWDED PROFESSION—THE CAUSE AND THE REMEDY.

We have in the past called attention to the overcrowded state of the profession in this country and the prospects for the future. It is not difficult to name a cause for this evil; it is chiefly to be looked for in the multiplication of facilities for medical education of a certain sort, and to the ambitious and advertising proclivities of *a certain portion* of the profession. For many years in the past there has been a steady multiplication of medical colleges, organized to meet a felt want —not of the medical profession—but of the founders. Articles of incorporation are easily and cheaply gotten, and with a little investment the new institution is launched. The result is not only an oversupply of diplomaed graduates, but the usual inverse ratio of quantity and quality. The highways and byways are raked for students; the preliminary requirements are nominal in the strictest sense; and the graduation requirements too often necessarily follow the same rule. The instruction is mediocre, the clinical facilities poor, but the institution goes its way and flourishes; the faculty gets an advertisement and a growing clientele of half-fledged doctors, all the readier by reason of their insufficient mental and professional acquirements to furnish business for their revered professors in the way of consultations, etc., while the profession as a whole and the public suffer in proportion. We have cheapened the medical profession by making it too common and lowering its standards, if not actually as compared with the past, at least relatively as compared with the scientific advances of the day. It is true that our best is in no way inferior to the best of any land, but our average is not what it should be, and our lowest is infinitely below what ought to be endured.

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[1] Bulletin of the American Academy of Medicine, 1890-1901, inclusive; The Journal, 1889, et seq.

This is what has been in the past and what we have not yet fully outgrown. That there are agencies and influences at work for the better is undeniable and their effects are already visible. The medical practice acts that exist now in the great majority of states are to be counted among these, and this we owe to the organized effort of the profession which has latterly become, more than ever before, alive to its own interests and that of the public in this regard. There is much yet to be done in this line; they must be made more universal and more uniform, and as regards the latter there must be no leveling down. If we wish to make ourselves respected we must make ourselves respectable—a truism too much overlooked in the past. Then, there should be a self-denying ordinance adopted by the profession generally and the title of professor be no longer an indication of stockholding in a corporation for profit, direct or indirect, but on the other hand a valid evidence of acquirements that have received the endorsement of public and professional appreciation. With this advance in requirements for practice there should be a marked and general stiffening up of the preliminary educational requirements; the reform must start at the fountain head if it is to be what is imperatively required. The control of entrance examinations must be put out of the hands of the medical college faculties, which should be delivered from the temptation of augmenting their student lists. There should be in each state a non-political authority, independent of the colleges, to regulate the requirements for admission to the medical course as well as to medical practice. This is already the rule in some states. Until this system is universally and efficiently applied we still shall have much that should not be.

The prospect, however, is brightening, and there is no call at present for any very pessimistic outlook for the future if we can only sacrifice self-interest and work together for the common good. Of the 160, more or less, existing medical colleges in this country and their thousands of professors and other medical attachés, there are a large number that can profitably be spared. It is to be hoped that with higher standards universally applied their number will soon be adequately reduced, and that only the fittest will survive.

WHAT SHOULD GOVERN THE STUDENT IN THE SELECTION OF A MEDICAL SCHOOL?

Young men and women entering on the study of medicine may be divided into two general classes. In the first are those who look upon the practice of medicine as a calling in which there must be self-sacrifice, hard work, constant care, and great responsibility. These are ambitious to prepare themselves to the best of their ability for the duties they assume. Their motives are high and noble. In the second class, happily getting smaller each year, are those who look upon the practice of medicine as a calling in which one can make a living without effort and into which entrance is easy. The only ambition of this class is to get a degree with the smallest outlay of time, energy, and money. To these we have no advice to give.

It is of the highest importance that the young man entering on the study of medicine should select a school which will best fit him for his work. The four years he spends in getting his degree will prove to be the most important four years of his life. If the student spends these four years in a medical college whose requirements for entrance are low, whose teachers are mediocre, whose facilities for instruction are poor, whose clinical advantages are inferior, there are nine chances to one that he will go through life a "poor doctor" in more ways than one. One of the laws of physics as applied to hydraulics is that water never rises higher than its source.

The first two years of the medical student's life are more important than the two later years, for in them the scientific foundation is laid. A practitioner must study the practical branches of medicine and surgery all his life and he will obtain clinical experience from every case which he treats, but the fundamental subjects are rarely studied after leaving college. It therefore behooves the student seeking a school to select one that is thoroughly equipped and capable of giving him the best possible instruction in the fundamental branches. Too many make the mistake of selecting for the first two years a school poorly equipped with teachers, with laboratory facilities, etc., with the intention of going to one of the leading colleges for the two later years. This is often done on account of ecomomy, but it is very poor economy. Better wait and save and then start right, for the extra investment thus made will bring satisfactory returns through life.

The better colleges have good laboratory facilities in connection with every fundamental branch, such as anatomy, histology, embryology, pharmacology, bacteriology, etc. They generously equip laboratories with necessary instruments for thorough individual instruction in all these branches. A student must often judge of the worth of an institution by personally examining its facilities for teaching these branches, for sometimes the catalogue will not give him reliable information in this regard.

In the last two years the practical side should be considered: that which applies to the everyday work which will fall to the young physician when he enters on his practice. To do good practical teaching here, clinical material is necessary. Without these no school can fit the young man in the final two years of his medical studies no matter what facilities it may have aside from them.

Laboratory and clinical facilities being the fundamental necessities, there will come other advantages that are not to be entirely slighted. For instance, the school that has connected with it men of repute, men who have made a name for themselves through investigations and scientific medical work, are to be considered before the schools which have no such men connected with the teaching faculty. While it does not follow that these names in themselves will necessarily make good students—and no one should aim to shine merely by reflected light from his alma mater—there is always an advantage in hearing instruction directly from the recognized masters in the profession. Such men, moreover, are generally appreciative of genuine interest on the part of students and will often give their special aid and attention in such cases.

While every systematic educational course has for its chief end to fit the student to use his mind, in medicine, as in every technical branch, a man must be trained to do as well as to think. Hence, the advantage of hospital training, the "practical year," the importance of which has been so emphasized by Ziemssen and Von Jaksch. Every student should look forward to an interneship as a final crowning of his medical course, and since this is not attainable by all, it is well for him to select a school in which the clinical instruction includes practical hospital work for every student as a dresser or clinical aid. Without some practical experience of this kind the conscientious newly launched practitioner will often feel almost overwhelmed by his responsibilities. The old preceptorial system met this need in a way, though otherwise lacking, the modern medical school in the recent past, if not at present, has too often worked ill in the opposite way by sending out graduates without adequate training under skilled oversight.

It must not be imagined that the good schools are only to be found in the large cities. There are institutions scattered all over the country, whose facilities are excellent, whose teachers are above the average, and who strive to give their students a thorough practical education. Such schools may have moderately small clinical advantages, compared to some in the larger cities; but this apparent lack is made up by there being fewer students to be subdivided into classes for personal instruction and for clinical work at close range. The medical department of some of our state universities, although located in small towns, are splendidly equipped for the first two years' work, even though the same institutions may not be well supplied with clinical advantages. The school, however, which creates in the young man an ambition to study, a craving for knowledge and a desire to keep up the work after he leaves the college, is the one that is to be considered as foremost. Such schools turn out men who become leaders in the profession, and their greatness reflects credit on their alma mater. A school with such credits is a safe one to select.

THE CASE METHOD OF TEACHING.

The case method of teaching which has been incidentally mentioned elsewhere in this issue, while originally elaborated in legal institutions, has also been utilized to advantage in medical instruction. In a crude form it has long been in use; the practice of demanding bedside diagnosis, etc., at clinics is an old one and has been employed by many teachers. The introduction of the fully-elaborated method at the University of Pennsylvania occurred some two years ago, and the details, as followed out in that institution, are given by Frazier in the University *Medical Bulletin* for September.

Each student is given a manifold copy of the complete clinical data of a case in the hospital records, including family history, physical examination, antecedents, blood, urine, sputum, etc., examinations as well as the full history of the disease. He is instructed to prepare a report from these facts including diagnosis, prognosis and treatment; in some cases only one or two of these may be required; in others, special attention is called to the diagnosis, prognosis or treatment. No conclusions are accepted or given credit for unless based on logical reasoning from the facts given. These papers are distributed each Saturday and a report required on the following Saturday. A week later the instructor analyzes the reports before the class, points out their errors and omissions, states what further examination might be conducted to elucidate the case, and gives the subsequent history, results of treatment, etc., as they occurred. As a rule, typical cases are not selected, but those that give the student some exercise of judgment in his diagnosis and they are so chosen as to work into a systematic scheme embracing instances of affections of each important class. Dr. Frazier finds the methods of value in developing the power of discrimination, educating the judgment, encouraging research into authorities, and widening the reading of the student. He also finds that it especially arouses enthusiasm and interest, a point the importance of which is not to be underrated.

It is evident that a plan that presents, as this does, cases as they will occur in actual practice must be more interesting than purely impersonal facts or dry enumeration of symptoms. Instruction in case-taking, which is at least indirectly involved in this method, is also important and perhaps it could not be better given. Though the observations here are ready-made, so to speak, they indicate what ought to be observed and it may be that this will prove to be one of the best adjuncts in the education of the faculties of medical observation.

THE PREPARATION FOR THE MEDICAL COURSE.

When the nation was younger, and the supply of physicians was small, and the demands of a rapidly increasing population for medical attention large, two years was considered sufficient time to equip the raw recruit for the performance of his professional work. The course of instruction at the medical school was, however, preceded and ably supplemented by association with an active practitioner as preceptor, and whose tutelage often constituted a most valuable and highly important factor in the education of the young physician.

This method, in conjunction in some instances with post-graduate study in foreign countries, resulted in a race of physicians who understood especially the art of medicine, and whose labors and results entitle them to the highest meed of respect praise and commendation. As time went on, however, the supply of medical men became ample, and eventually excessive, while at the same time the field of medical knowledge became wider and more difficult of encompassment, so that a fuller measure of learning and a higher degree of proficiency were required of the medical graduate. Thus, a period of study covering three years was declared insufficient, and the present course of four years was established.

With these advances, and by reason of the requirements growing out of them, it became necessary to make entrance upon the study of medicine conditional upon the possession of certain intellectual and scientific qualifications. It thus comes about that in a small, but growing number of medical schools, the post-session of a Bachelor's degree as an indication of adequate preparation has been made the prerequisite of matriculation. Now, it has been found that by this course the graduate of medicine is pretty well on in life when he receives his professional degree, and it is contended, as it seems to us reasonably, that by making a part of the work of the last collegiate year preparatory to that of the medical course at least one year of this long period of study could be saved the student, without detriment either to himself or to the profession of medicine. Elementary work should have no place in the curriculum of the medical school proper, and the student should be thoroughly grounded in such branches as botany, biology, chemistry, physics, etc., apart from the possession of a general education before he is permitted to enter the medical school.

Other things being equal, the best and most broadly educated men and women will make the best and most successful medical students and practitioners. But it is evident that a certain harmonization in our general educational scheme is necessary to give it a unity and a continuity that it has not in the past possessed, but in which, evidence is now accumulating, a good beginning has already been made.

THE TEACHING OF ANESTHESIA IN MEDICAL SCHOOLS.

The contempt bred by familiarity is exhibited by the comparative indifference to danger displayed in the practice of anesthesia. The gravity of narcosis by ether, chloroform, nitrous oxid, ethyl bromid, etc., is not always fully appreciated, although in order to effect the desired result the patient is necessarily brought in varyingly dangerous proximity to the point of dissolution. In view of these facts no special argument should be required to make clear the wisdom, nay, the urgency, of including instruction in both the practice and the principles of anesthesia as an essential part of the medical curriculum. In this spirit there should be given a series of lectures dealing with the physiologic actions and the toxic effects of the various anesthetics employed, and the means for combating the latter should they arise, and laying down the indications for and against individual anesthetics in the presence of varying disturbing factors, together with a demonstration of the various forms of apparatus and their mode of employment, as well as the measures to be taken for resuscitation; and, finally, the student should be required to witness a certain number of narcotizations, and under skilled supervision participate directly in a number of others. As things are at present, the graduate must gain his own experience either in private or in hospital practice, and while fortunately this course is in the overwhelming majority of cases unattended with serious results, these may under certain circumstances be most disastrous. A few hospitals have specially trained anesthetists under whose supervision narcosis is practiced, and it would be a step in advance if all institutions of this character were similarly officered. For these reasons it must be obvious that the practical teaching of anesthesia in the medical schools is an end much to be desired.

THE USE AND ABUSE OF LABORATORIES.

It is a truism that every agency capable of doing good is in equal degree capable of doing harm. The difference resides in the mode of application, or, as with drugs, in the dose. This statement is applicable to laboratory work as it exists in medical education. Knowledge is complex, and isolated facts often have little value, but when correlated with others their importance may become manifest. So the teachings of the laboratory, which can not be considered as final, if not correlated with those of clinical observation and of reading, may be barren and even lead to misconception. Demonstrative instruction is the most impressive, and in so far as the work of the laboratory is directed to a demonstration of normal and morbid processes will it be of practical value. The laboratory student further acquires or develops a spirit of investigation which will stand him in good stead in the scientific study of cases, with the result that his diagnoses will be the more accurate and his treatment the best adapted to the individual case and the most successful in result.

MEDICAL EDUCATION TO-DAY FAR BETTER THAN IN THE PAST.

Unsatisfactory as the condition of medical education in this country has been in the past and many as are the desiderata of the present time, there is ample reason for encouragement. Twenty-eight years ago there was but a single medical school in the country with more than a two-year course, and few even fifteen or eighteen years ago. Now, as shown by tables elsewhere, there are but two in the country that do not demand, or at least profess to demand, four years' attendance before graduation, and of these two, one proposes to adopt the four-year course after 1902. It is true that there may be evasions of the rule and that some institutions may profess more than in fact they perform, but these must be rare exceptions among those recognized as reputable colleges, if they really exist at all. Medical education in this country is a different thing from what it was two decades ago, and there is every prospect that the progress of the recent past will be continued in the future.

Death of President McKinley

Without reproach in life or fear in death, William McKinley, Christian knight and twenty-fifth President of the United States, has passed away.

A fateful fortnight is gliding into its place in history. A cruel assault; a gallant and blameless man stricken; a day or so of gloom and the hot wrath of millions; a day or so of wild joy, with the mirage of health and service luring on; a day or so of fear and foreboding; a smile, a gasp, a woman yearning by; and they who thought to change the rule of man by force began to feel, and long will feel, the dagger of their new dispensation press hard and cold against themselves.

The solemn thunder of the funereal car has ceased; ceased, too, has the sonorous tribute of the minute gun, and the first flood of neighbors' silent tears. The dead, who knowingly wronged no man, is in his grave; and the Nation that is mightier, juster, better for his having lived, sobs "Amen," faces front and marches on.

Few words and simple speech best voice the dead man's requiem. William McKinley had those things and did those things that mark a great man. No extravagant eulogy nor intoxicating rhetoric should cloud or confuse our judgment of the man as he was in his heart. Years ago, when he climbed the first steps of his broad career, he was already an average American. He knew, had sacrificed for, and was helping to get what his country needed to make it one, to make it strong, to make it great among the nations. To the knowledge and deeds of the apprenticeship of this average American came, in richer form, in the harvest years of his mastery, tact, prudence, kindliness, brotherly love, and an abiding purpose and courage to know and do the will of his people and his God. Of such are statesmen whom nations trust and love.

In the category of the great we may write him who sleeps in glorious peace beneath the martyr's palm. He has led a pure life and shone a peerless husband. He has taken up arms for his country. He has put away bitterness from within his party. He has led his countrymen to the conquering stand of a nation that makes, sells, and lends, rather than that of one that begs, borrows, and defaults. He has preached brotherhood and pursued it, and from his touch no wounds smart. He has made war only when he must, and when he has ceased he finds no foe. Triumph has brought new lands and problems of rule without precedent. With his last breath he has warned his brethren that a nation can not live in, upon, and for itself alone; and, hence, for new conditions he has proclaimed new policies. As a man he has been the American's ideal, and higher there is none; as a statesman he has been trustworthy, if not aggressive in initiative. We know he was good; let us err, if err we do, upon the right side and also call him great.

Meantime trade, the Nation's life, halts not, nor falters the Nation's trust in itself and form of government. To the widow of the beloved dead goes out sympathy deep and significant in its universality. Continents and isles mourn with us. Little that has followed in the train of the martyr's fall would we have had unsaid or undone. "God's in His heaven; all's well with the world."

A great man that was loved has fallen. In the crises of time primitive virtues revive and rule. An ancient Roman has passed from among us. Of such they sang:

"Integer vitae, scelerisque purus."

THE WOUNDS OF PRESIDENTS GARFIELD AND M'KINLEY.

Naturally enough, laymen, the lay press and many medical men have compared the wounds of President Garfield and President McKinley since the latter was so brutally murdered on September 6. There is, however, from a surgical standpoint, absolutely nothing similar in the wounds of these illustrious patients. The wound in President Garfield's arm was a flesh wound, as was the one in President McKinley's breast, and can, therefore, be dismissed, as having no bearing upon the result.

The second and fatal wound of President Garfield was fired from the rear, and was made by a 44-caliber bullet, fired from a British bulldog revolver. The result of the autopsy showed how completely the distinguished surgeons in attendance had been deceived as to the real nature of the injury; for instead of passing through the liver, transversing the abdominal cavity, and lodging in the anterior wall, as was thought, the wound was entirely extra-peritoneal. The records of the autopsy leave no room for doubt, for the postmortem was made by the President's eight surgeons themselves and the report signed by all. The official announcement of its results said:

"It was found that the ball after fracturing the right eleventh rib, had passed through the spinal column in front of the spinal canal, fracturing the body of the first lumbar vertebra, driving a number of small fragments of bone into the adjacent soft parts and lodging below the pancreas, about two inches and a half to the left of the spine and behind the peritoneum, where it had become completely encysted.

"The immediate cause of death was secondary hemorrhage from one of the mesenteric arteries adjoining the track of the ball, the blood rupturing the peritoneum and nearly a pint escaping into the abdominal cavity. An abscess cavity, six inches by four in dimensions, was found in the vicinity of the gall-bladder, between the liver and the transverse colon, which were strongly adherent. It did not involve the substance of the liver, and no communication was found between it and the wound. A long suppurating channel extended from the external wound between the loin muscles and the right kidney *almost to the groin. This channel, now known to be due to the burrowing of pus from the wound, was supposed during life to be the track of the ball.*"

While the immediate cause of President Garfield's death is said to have been secondary hemorrhage, such a result was due to a sloughing blood vessel, one of the usual terminations of septic cases. President Garfield had pyemia. His symptoms indicated it; the autopsy proved it. The question has been asked thousands of times during the past few days on account of the favorable bulletins reporting President McKinley's condition, if his distinguished predecessor in office could have been saved by modern surgery. Possibly he could; though it is optimistic and presuming too much to say that such a result would have been, as has so often been said in the recent past, reasonably certain.

A 44-caliber bullet fracturing the rib, then crashing through the body of a lumbar vertebra and driving a number of fragments into the soft parts, thence lodging behind the pancreas, makes a wound and condition not to be despised by even the boldest and deftest of modern operators. Moreover, President Garfield was a very stout man, which would have increased the difficulties. Were such a bullet promptly located to-day by the X-rays, any experienced and conscientious surgeon would hesitate as to his course. If he elected to remove the bullet, again he would be embarrassed to know whether it were best to choose the anterior or posterior route. A laminectomy is a comparatively simple operation in a thin subject; but to reach the body of a vertebra, much less go anterior to it, as would have been necessary to have recovered the ball and removed the spiculæ of bone driven forward by it, in a patient of President Garfield's build, would have taxed both the anatomical knowledge and surgical daring of the greatest of his surgeons, the gifted Agnew. If the anterior route were chosen, one has only to think of the important vessels and nerves superimposed on the bullet, and were almost in contact with it. By either, anterior or posterior route, the danger from hemorrhage would of necessity have been great.

Again, can we say that pyemia has been banished from surgery? Certainly not; rare it is, to be sure, at present; but President Garfield had just the kind of a wound that is to-day, with all our much-vaunted aseptic and antiseptic surgery, difficult to treat and uncertain in its results. Compound fractures, especially of soft bones such as vertebræ and ribs in inaccessible situations, constitute the most fertile cause of pyemia to-day. Moreover, pyemia following bone injuries is admittedly more fatal than pyemia following injury to soft parts. Therefore, there should not have been at the time so much criticism of those brave and skilful men who labored incessantly for nearly three months to save their distinguished patient. Now, that the matter is up again for discussion, it should be the duty of medical men, particularly, to set matters and history right, and not encourage the belief, so very general, that President Garfield's wound, fatal in 1881, would be trivial to-day. It was fatal in 1881 and would probably be fatal in 1901. Mistakes may have been made; but even if they had not been, there is little likelihood that the Nation would have been spared the poignant grief at the brilliant Garfield's untimely taking off and the disgrace of a second murdered president.

President McKinley was shot from the front with a 32-caliber ball entering five inches below the left nipple and one and one-half inches to the left of the median line. It traversed the abdominal cavity, perforating both anterior and posterior walls of the stomach, the opening in the former being small, the one in the latter large and ragged—just the character of wound usually made by a pistol ball at very close range. After thorough closure of the gastric wounds, from which there had been some extravasation, a careful search was made for other possible injuries. None were discovered, and the surgeons were reasonably certain that the bullet had found lodgment in the muscles of the back. The abdominal cavity was freely irrigated with normal salt solution, and closed without drainage by through-and-through sutures of silkworm gut. A small piece of clothing—presumably from the undershirt—had been carried in by the bullet; but was, we understand from the statements given out, found in the abdominal portion of the wound.

In exploring the abdomen, Dr. Mann acted wisely in enlarging the original wound, rather than performing median section. Irrigation of the cavity is to be distinctly commended; likewise the use of interrupted sutures, saving as they do the loss of time, and facilitating to no inconsiderable degree, when rightly placed, drainage—two very important elements in the President's condition.

Whether or not provision should have been made for further drainage depends entirely upon the existing conditions, and they were best judged by the distinguished surgeons charged with the responsibility of saving, if possible, the most precious life in the world. The profession has had the utmost confidence in each of them; the Nation has shown its gratitude for the promptness with which their awful responsibility was assumed, and the thoroughness and ability with which it was carried out.

If the operation had been hurried there might be some reason to feel that possibly each step of it could not have been considered as judiciously as the occasion demanded. Such was not the case; the President was under ether an hour and a half and was in such good condition all the time that there was no demand made upon the operator for haste. The autopsy shows that good judgment was shown in not prolonging search for the ball.

In declining to use the X-rays subsequently, notwithstanding the general anxiety as to the ball's exact location, the surgeons were judiciously passive and following the teachings of the greatest of military surgeons. A second anesthesia and operation for the extraction of a 32-caliber bullet in the muscles of the back would, under the circumstances, have been not only injudicious, but censurable. One can not forbear to say at this time that the Roentgen rays are not an unmixed blessing, as death has followed operations for encysted bullets that were doing no harm at the time of their removal. One of a yielding nature may be induced to act against his better judgment, on account of the anxiety and importunings of patient and friends, always greater than they should be, but due to an exaggerated importance given by laymen to the "ball" and its recovery. Those who knew the President's surgeons personally have felt assured from the first that no precipitate action would be taken to meet a danger largely chimerical in its nature, whilst urgent, portentous, awful problems were pressing forward for solution.

What were the probabilities when it was known that President McKinley, a man 58 years old, with a weak heart, had sustained a penetrating wound of the abdomen? Death, undoubtedly, was the likelier issue. When, however, the details of the operation were given Saturday morning, and it was recalled that the President was shot at 4:30 in the afternoon, when his stomach was presumably empty, or nearly so, more than a modicum of comfort and hope was felt by a stricken Nation. The operation had been promptly done; it had been thoroughly well done; it had been done by the best exponents of modern surgery. The incidents of the first, second, and third days—the period of greatest danger—were distinctly favorable to the President's recovery, though his abnormally high pulse-rate caused uneasiness. It had all along been out of proportion to the temperature and respirations, but it was explained as being usual with him. The fourth and fifth days served only to fortify his surgeons in the opinion already expressed that he would recover. It seemed that he would and that he should get well; yet there were still dangers ahead to which a too hopeful and impulsive people were oblivious. They came on the sixth day and had practically ended this magnificent life in another twenty-four hours!

Of the exact causes leading to the change which resulted in death, we shall know more when the full report of the autopsy is published. This will be after cultures have been made and a histological examination has been completed. When this full scientific report is officially given out it will be time to discuss the cause which led to the necrotic condition found at the autopsy but not before. Until then at least there should be no criticism of the management of the case and full credence should be given to the official bulletins signed by the attending surgeons and to these only. The absence from Buffalo of the nearest relatives of President McKinley at the time of the unfavorable change showed plainly enough that they had left him doing so well that only recovery was thought of. The public were fairly and candidly treated from beginning to end. The unexpected happened. While the Nation grieves as it has never done before on account of the pathetic and unusual circumstances surrounding President McKinley's death, we should give full credit and honor to the heroic surgeons who, with a moment's notice, gave to the President of the United States everything that science had to offer. As we think so will the lay press, his countrymen and the world.

The criticisms of 1881 are not, we hope, to be repeated. The courageous action of Dr. Mann and his associates in performing an immediate laparotomy is more to be commended now than it would have been three years ago; for since our war with Spain and the Anglo-Boer war in South Africa non-intervention in gunshot wounds of the abdomen has been the rule in military surgery. A masterly inactivity in such injuries has had the weighty endorsement of Senn, Nancrede, Lagarde, Parker, and other surgeons of prominence in our army, and Treves, Sir William MacCormac, and others of the English surgical staff. Many of the *supposed* perforating wounds of the abdominal cavity in the American and English armies recovered without operation. A rule which is applicable and proper in military surgery can not always be accepted in civil practice. The wounds are different; the facilities and environments are different. The modern rifle-ball is small, conical, .303 of an inch in caliber, of great velocity, and cuts like a knife. Such a wound occurring in soldiers with comparatively empty gastro-intestinal tracts—brought about by starvation and diarrhea, common conditions in soldiers—might be recovered from; whereas, a pistol ball which is usually larger, rounder and of less velocity, makes a greater and more ragged opening, through which extravasation from any of the hollow viscera injured would almost surely take place. It is also far more likely to carry in clothing and other foreign material which would have a tendency to cause irritation and even sepsis.

It is of interest to recall the fact that the first successful laparotomy for a shot wound of the abdomen was a pistol shot wound of the stomach, successfully operated on by Kocher of Berne in 1884. Kinloch of South Carolina had previously (1882) unsuccessfully operated on a case of multiple wounds of the small intestines. The first successful laparotomy for an intestinal wound was by W. T. Bull in 1884.

While the prompt, commendable and praiseworthy surgery at Buffalo did not result as it deserved to, in the recovery of President McKinley, it has placed the treatment of gunshot wounds of the abdomen upon a firmer and better footing than ever before; just at a time, too, when it had suffered a partial eclipse, on account of the teachings of military surgeons; teachings which are right for the battlefield and emergency hospitals, with their poor equipment for abdominal work, but wrong when one can have the benefit of timely aid from a competent abdominal surgeon in a well-equipped modern hospital.

If in dying, this great and good man has advanced the cause of surgery, and has been the means of exterminating anarchy in the country he loved and served so well, then he will not have suffered and died in vain!

NO DISAGREEMENT AMONG THOSE WHO ATTENDED PRESIDENT McKINLEY.

The undersigned surgeons and physicians who were in attendance on the late President McKinley have had their attention called to certain sensational statements recently published in the daily papers, and particularly one New York paper, indicating dissensions and mutual recriminations among them.

We desire to say to the press and public, once for all, that every such publication and all alleged interviews with any of us containing criticism of one another or of any of our associates are false, and are nothing but scandal-mongering.

We say again that there was never a serious disagreement among the professional attendants as to any of the symptoms or as to the treatment of the case or as to the bulletins which were issued. A very unusual harmony of opinion and action prevailed all through the case.

The unfortunate result could not have been foreseen before the unfavorable symptoms declared themselves late on the sixth day and could not have been prevented by any human agency.

Pending the completion and publication of the official reports of the postmortem examiners and attending staff, we shall refuse to make any further statements for publication and alleged interviews with any of us may be known to be fictitious. MATTHEW D. MANN; ROSWELL PARK; HERMAN MYNTER; EUGENE WASDIN; CHARLES G. STOCKTON.

Buffalo, Sept. 17.

MANAGEMENT OF THE CASE OF PRESIDENT M'KINLEY.

It is not unusual for physicians or surgeons to make mistakes in judgment and therefore it often occurs, when a case is ended and death supervenes, that those who have been in attendance look back and wish they had done a little differently here or there. Such things are liable to occur until the time comes when human judgment is infallible. But reviewing the facts of President McKinley's case from the beginning, so far as they have come to us from reliable sources, and supplementing the reports by all that we can reasonably surmise, we see no reason for the slightest criticism of the surgical and medical treatment. Whatever medical science could do at the present time was apparently done. The administration of a minute quantity of solid food on Wednesday, which has been criticised, appears to us to have been perfectly justifiable and that it could have had no ill effect is sufficiently proven by the autopsy. From the prompt acceptance of responsibility by the surgeons at the beginning to the last sad phase there is nothing in the conduct of the case that calls for self-reproach on their part or justifies criticism of their course by others. It shows more prominently than many cases our limitations and is in this way humiliating, but this does not in any way detract from the services of those who did all that human wisdom and ability could do.

When on Friday morning announcement was made of the relapse which had taken place, those in charge were criticised for the supposed optimistic reports that had been circulated. Before criticising, however, it would be well to inquire whether criticism was just. Physicians who have been interviewed know that the report of what they say is more likely than not to be incorrectly given to the public. Those connected with this case have disclaimed responsibility for what appeared in the newspapers both before and since the President's death. Our reporter called on three of them for information for this journal and they justly refused to make any statement outside of the official bulletins. If they were expressing opinions to the newspaper reporters, they certainly would not have held them back from the medical journals. Dr. Roswell Park denied on Thursday morning, the day before the relapse, a previous newspaper report crediting him with having expressed a belief in the certain recovery of the President.

Others of the Buffalo surgeons also have repeatedly denied any responsibility for statements attributed to them in the papers. Drs. Mann and Park, we are authoritatively informed, have stated that at no time were they free from anxiety, and it is probable that the same can be said of the others, with possibly one exception.

The surgeons should be held responsible for the official bulletins which they signed and for these only. These show no utterance of absolute confidence in recovery. Rather, the continued high pulse was indicative to members of the profession that all was not as it should be. We therefore see no reason for criticism on this point. When the facts are made known it will probably be found that some symptoms were present that were not what might have been desired, but it would have been just as unwise to have given publicity to this indication of possible danger as to give the optimistic opinions that were unjustly credited to some of the surgeons. The editorial opinion expressed in the last issue of The Journal regarding the official and other statements of the attending surgeons is still held as the only one justified by the facts.

When the full official report of the autopsy is published comments may be made regarding the gangrenous condition found in the track of the bullet. It would be merely theorizing to discuss the subject before the bacteriological and the histological examination has been made and the findings published.

THE SHOOTING OF THE PRESIDENT.

(From our Correspondent.)

Buffalo, N. Y., September 17, 1901.

The feeling of security for the recovery of the illustrious patient which the attending surgeons had was of only brief duration. From the time of operation the pulse was rapid and gave great concern to the attendants. This was at first supposed to be due to the shock from the wound and operation, especially when it was seen that the great sympathetic nervous system and its solar plexus was in the line of the track of the second bullet. The continuance of the high pulse, however, compelled the discarding of this theory. The question of peritoneal sepsis then arose; but there was no abdominal tenderness, no meteorism and no muscular retraction; as peristalsis was present, as the temperature fell instead of rising, and the pulse kept high, and as, furthermore, the examination of the blood made by Dr. Wasdin showed no leucocytosis, this cause was excluded.

During Tuesday of last week it was noted that the nutritive enemata gave the President a good deal of discomfort and were not retained. Broths were, therefore, ordered to be given in small amounts by the mouth, and on the following day a bit of toast was given. The bowels had not moved on that day and as the heart action still remained unsatisfactory it was thought expedient by the surgeons in charge to call Dr. Charles G. Stockton in consultation.

The question next arose whether the high pulse might not be dependent on intestinal toxemia. A considerable amount of indican was found on examination of the urine, but it diminished greatly when, as the result of cathartics, several evacuations had occurred. Nevertheless the high pulse continued. The increasing weakness during Wednesday night and Thursday resulted in the calling of Drs. William W. Johnson of Washington, D. C., and Edward G. Janeway of New York City, in consultation.

Despite heart stimulants, digitalis, adrenalin, normal salt transfusion and oxygen inhalations, the heart's action became weaker and weaker, and because there was no reaction from all the stimulation, the President's condition became one of utter hopelessness. It was expected that he would die during Friday but he survived until 2:15 Saturday morning.

He suffered little pain, and his sturdy faith, courage and bravery continued to the end. Dr. Mynter says of him: "The fortitude, courage, cheerfulness, and gentle consideration toward all his attendants, the doctors, nurses and orderlies, was remarkable. The martyred President won the love affection and admiration of everyone who had the privilege of administering to his wants during those seven sad days."

THE POSTMORTEM EXAMINATION.

The autopsy was held at the Milburn house at 11 a. m., Saturday, September 14. The examination was made by Dr. Harvey R. Gaylord, of the New York State Cancer Laboratory, assisted by Dr. Herman G. Matzinger, professor of clinical pathology in the University of Buffalo. Major W. B. Kendall, surgeon U. S. A., Fort Porter, and Captain Edward L. Munson, assistant surgeon, U. S. A., of the Brigade Hospital represented the

Government. Drs. Mann, Mynter, Park, Wasdin, Rixey, Stockton, Janeway, Johnson, Cary, and Baer, and the District Attorney and a stenographer were also present.

The following were the findings of the autopsy: Rigor mortis. The wound on the chest consisted of a blackish-yellow abrasion, surrounded by a large zone of discoloration. The point of impact of the first bullet was between the second and third ribs, just at the right edge of the sternum. Incision through the tissues at this point showed a moderate blood infiltration, extending to the muscle, and immediately under the point of impact, a small cavity was seen, the size of a pea, where the skin had been torn away from the subcutaneous tissue.

On opening the abdomen, the wall of which was two and one-half or three inches in thickness, the omentum was found adherent all around the wound of operation. This wound was five inches long, extended down to the muscle and was healthy in appearance, no gangrene being present. The omentum was healthy and no signs of peritonitis were evident. The intestines were smooth and shiny without adhesions or exudate. The mesentery of the transverse colon was adherent to the stomach wound. On loosening these adhesions, the sutures of the wounds of the anterior and posterior walls of the stomach were found tight and in place, allowing no leakage.

Around the sutures, however, there was a zone of total gangrene of the wall of the stomach about two inches in diameter and ready to slough. A similar gangrenous condition was found on the opposing surface and adherent mesentery of the transverse colon, the necrosis extending into the head of the pancreas.

From the wound in the posterior wall of the stomach it was found that the bullet passed through the transverse mesocolon, near its attachment, thence through the posterior layer of peritoneum, cutting a groove into the upper end of the left kidney, and entering the retro-renal fatty tissue. The whole track of the bullet presented the appearance of a gangrenous hole, the gangrene in the retro-renal tissue being of the size of a fist. From this point the bullet passed into the posterior muscular tissue and could not be found, although careful search was made for four hours.

The heart was small, covered and infiltrated with fat, and the muscular walls were thinned. One dram of a turbid yellow serum was found in the pericardial cavity, but there was no evidence of injury of the heart, nor was pericarditis present. The kidneys were somewhat contracted, but all the other organs were normal.

THE CAUSE OF DEATH.

The necropsy showed that death was the result of sepsis due to gangrene resulting from the wound and that it could not have been avoided. Had the President lived twenty-four hours longer the gangrenous area around the stomach would have sloughed and death would have resulted from diffuse peritonitis.

The result of the operation so far as it went was perfect. No peritonitis was present, no particles of food were found outside of the stomach, but Nature had made no effort to repair the injury.

About twenty-four cultures were taken from the pericardium blood, right auricle, the healthy parts of the peritoneum, and along the entire gangrenous track.

REMARKS.

There has been much lay criticism because of the small bit of toast which the President was allowed to have on Wednesday morning, and these criticisms credit intestinal toxemia to its ingestion. Nothing was ordered for the President without the concurrence of all the surgeons in attendance, and the report of the autopsy just given demonstrates that the toast could have had obsolutely no effect on the outcome of the case.

Towards the last, the surgeons were inclined to believe that the wound from the first bullet on the sternum might have produced a contusion of the heart with a probable myocarditis or pericarditis from which the high pulse-rate might be due, but this hypothesis also was not borne out by the findings of the autopsy. It was at one time suggested that the President had a tobacco heart, but as he smoked only three or four cigars a day this is very unlikely.

The question whether or not the bullet was poisoned is attracting considerable attention just now. It could not have been poisoned with curare as was suggested, since this agent produces a rapid paralysis of the heart. The claim that it might have been steeped in a culture of virulent bacteria is ingenious, and Dr. Mynter says that if it had been dipped in a pure culture of pyogenic bacteria, just such a wound might have been produced. The three remaining cartridges are in the hands of Dr. Herbert Hill, the city chemist, who will make a chemical analysis, and Dr. Herman Matzinger will make a bacteriologic examination.

It has also been suggested that the necrosis might be accounted for by the injury to the pancreas and the leakage of pancreatic juice. Dr. Park considers this possible and refers to the work of Williams, Flexner and Opie in this direction.

The surgeons disclaim many reports in the lay press reported as coming from them. The official report will not be ready until next week. The bacteriologic examination of cultures taken and the microscopic examination of sections of tissues are not yet completed. The lack of leucocytosis in the blood-count may be attributed to lack of reaction in the repair of the wound. All the samples of urine taken were negative with the exception of that obtained after the operation, which, it is reported on good authority, showed hyaline casts but with a normal amount of urea and with no albumin reaction. This was considered to be possibly due to ether.

OFFICIAL BULLETINS.

BUFFALO, Sept. 6, 7 P. M.—The President was shot about 4 o'clock. One bullet struck him on the upper portion of the breastbone, glancing and not penetrating. The second bullet penetrated the abdomen five inches below the left nipple and one and one-half inches to the left of the median line. The abdomen was opened through the line of the bullet wound. It was found that the bullet had penetrated the stomach. The opening in the front wall of the stomach was carefully closed with silk stitches, after which a search was made for a hole in the back wall of the stomach. This was found and also closed in the same way. The further course of the bullet could not be discovered, although careful search was made. The abdominal wound was closed without drainage. No injury to the intestines or other abdominal organ was discovered. The patient stood the operation well. Pulse of good quality, rate of 130. Condition at the conclusion of the operation was gratifying. The result can not be foretold. His condition at present justifies hope of recovery.—George B. Cortelyou, Secretary to the President.

10:40 P. M.—The President is rallying satisfactorily and is resting comfortably. Temperature 100.4 degrees; pulse, 124; respiration, 24.—P. M. Rixey, M. B. Mann, R. E. Park, H.

Mynter, Eugene Wasdin, George B. Cortelyou, Secretary to the President.

Buffalo, Sept. 7, 1 A. M.—The President is free from pain and resting well. Temperature, 100.2; pulse, 120; respiration, 24.

3 A. M.—The President continues to rest well. Temperature, 101.6; pulse, 110; respiration, 24.—P. M. Rixey, George B. Cortelyou, Secretary to the President.

6 A. M.—The President has passed a good night; temperature, 102; pulse, 110; respiration, 24.—P. M. Rixey, Roswell Park, George B. Cortelyou, Secretary to the President.

9 A. M.—President passed a fairly comfortable night and no serious symptoms have developed. Pulse, 146; temperature, 102; respiration, 24.—P. M. Rixey, M. D. Mann, Roswell Park, Herman Mynter, Eugene Wasdin, George B. Cortelyou, Secretary to the President.

12 M.—There is no decided change in the President's condition since last bulletin. Pulse, 136; temperature, 102; respiration, 28.—P. M. Rixey. George B. Cortelyou, Secretary to the President.

3:30 P. M.—The President continues to rest quietly; no change for the worse. Pulse, 140; temperature, 102.2; respiration, 24.—P. M. Rixey, M. D. Mann, Roswell Park, H. Mynter, Eugene Wasdin, George B. Cortelyou, Secretary to the President.

6:30 P. M.—There is no change for the worse since last bulletin; pulse, 130; temperature, 102.5 degrees; respiration, 29. —P. M. Rixey, George B. Cortelyou, Secretary to the President.

9:30 P. M.—Conditions continue much the same. The President responds well to medicine. Pulse, 132; temperature, 102.5; respiration, 25. All temperatures reported are taken in the rectum. The physicians in attendance wish to say that they are too busily engaged to repy to individual telegrams.—P. M. Rixey, Roswell Park, H. Mynter, Eugene Wasdin, George B. Cortelyou, Secretary to the President.

Buffalo, September 8.—The public will be kept fully advised of the actual condition of the President. Each bulletin is carefully and conservatively prepared and is an authoritative statement of the most important features of the case at the hour it is issued. The people are entitled to the facts and shall have them.—George B. Cortelyou, Secretary to the President.

3:20 A. M.—The President has passed a fairly good night; pulse 122; temperature 102.4 degrees; respiration 24.—P. M. Rixey, H. Mynter, George B. Cortelyou, Secretary to the President.

9 A. M.—The President passed a good night and his condition this morning is quite encouraging. His mind is clear and he is resting well; wound dressed at 8:30 and found in a very satisfactory condition. There is no indication of peritonitis. Pulse 132; temperature 102.8; respiration 24.—P. M. Rixey, M. D. Mann, Roswell Park, Herman Mynter, Eugene Wasdin, George B. Cortelyou, Secretary to the President.

12 M.—The improvement in the President's condition has continued since last bulletin; pulse 128; temperature 101 degrees; respiration 27.—P. M. Rixey, George B. Cortelyou, Secretary to the President.

4. P. M.—The President since the last bulletin has slept quietly, four hours altogether since 9 o'clock. His condition is satisfactory to all the physicians present. Pulse 128; temperature 101; respiration 28.—P. M. Rixey, M. D. Mann, Roswell Park, Herman Mynter, Eugene Wasdin, Charles McBurney, George B. Cortelyou, Secretary to the President.

9. P. M.—The President is resting comfortably and there is no special change since last bulletin. Pulse 130; temperature 101.6; respiration 30.—P. M. Rixey, M. D. Mann, Roswell Park, Herman Mynter, Eugene Wasdin, Charles McBurney. George B. Cortelyou, Secretary to the President.

Buffalo, September 9, 6 A. M.—The President passed a somewhat restless night, sleeping fairly well. General condition unchanged. Pulse, 120; temperature, 101; respiration, 28.—P. M. Rixey, M. D. Mann, George B. Cortelyou, Secretary to the President.

9:20 A. M.—The President's condition is becoming more and more satisfactory. Untoward incidents are less likely to occur. Pulse, 122; temperature, 100.8 degrees; respiration, 28.—P. M. Rixey, M. D. Mann, Roswell Park, Herman Mynter, Eugene Wasdin, Charles McBurney, George B. Cortelyou, Secretary to the President.

3 P. M.—The President's condition steadily improves and he is comfortable, without pain or unfavorable symptoms. Bowel and kidney functions normally performed. Pulse, 113; temperature, 101; respiration, 26.—P. M. Rixey, M. D. Mann, Roswell Park, Herman Mynter, Eugene Wasdin, Charles McBurney, George B. Cortelyou, Secretary to the President.

9:30 P. M.—The President's condition continues favorable. Pulse, 112; temperature, 101; respiration, 27.—P. M. Rixey, M. D. Mann, Roswell Park, Herman Mynter, Eugene Wasdin, Charles McBurney, George B. Cortelyou, Secretary to the President.

Buffalo, September 10, 7 A. M.—The President has passed the most comfortable night since the attempt on his life. Pulse, 118; temperature, 100.4; respiration, 28.—P. M. Rixey, Roswell Park, George B. Cortelyou, Secretary to the President.

9 A. M.—The President's condition this morning is eminently satisfactory to his physicians. If no complications arise a rapid convalescence may be expected. Pulse, 104; temperature, 99.8; respiration, 26. This temperature is taken by mouth and should be read about one degree higher by rectum.—P. M. Rixey, M. D. Mann, Roswell Park, Herman Mynter, Eugene Wasdin, Charles McBurney, George B. Cortelyou, Secretary to the President.

3:20 P. M.—There is no change since this morning's favorable bulletin. Pulse, 110; temperature, 100; respiration, 28. —P. M. Rixey, M. D. Mann, Roswell Park, Herman Mynter, Eugene Wasdin, George B. Cortelyou, Secretary to the President.

10:30 P. M.—The condition of the President is unchanged in all important particulars. His temperature is 100.6; pulse, 114; respiration, 28. When the operation was done on Friday last it was noted that the bullet had carried with it a short distance beneath the skin a fragment of the President's coat. This foreign material was, of course, removed, but a slight irritation of the tissues was produced, the evidence of which appeared only to-night. It has been necessary on account of this slight disturbance to remove a few stitches and partially open the skin wound. This incident can not give rise to other complications, but it is communicated to the public, as the surgeons in attendance wish to make their bulletins entirely frank. In consequence of this separation of the edges of the surface wound the healing of the same will be somewhat delayed. The President is now well enough to begin to take nourishment by the mouth in the form of pure beef juice.—P. M. Rixey, M. D. Mann, Roswell Park, Herman Mynter, Charles McBurney, George B. Cortelyou, Secretary to the President.

Buffalo, September 11, 6 A. M.—The President has passed a very comfortable night. Pulse, 120; temperature, 100.2; respiration, 26.—P. M. Rixey, Eugene Wasdin, George B. Cortelyou, Secretary to the President.

9 A. M.—The President rested comfortably during the night. Decided benefit has followed the dressing of the wound made last night. His stomach tolerates the beef juice well, and it is taken with great satisfaction. His condition this morning is excellent. Pulse, 116; temperature, 100.2.—P. M. Rixey, M. D. Mann, Roswell Park, Herman Mynter, Eugene Wasdin, Charles McBurney, George B. Cortelyou, Secretary to the President.

3:30 P. M.—The President continues to gain and the wound is becoming more healthy. The nourishment taken into the stomach is being gradually increased. Pulse, 120; temperature, 100.2.—P. M. Rixey, M. D. Mann, Roswell Park, Herman Mynter, Eugene Wasdin, Charles McBurney, George B. Cortelyou, Secretary to the President.

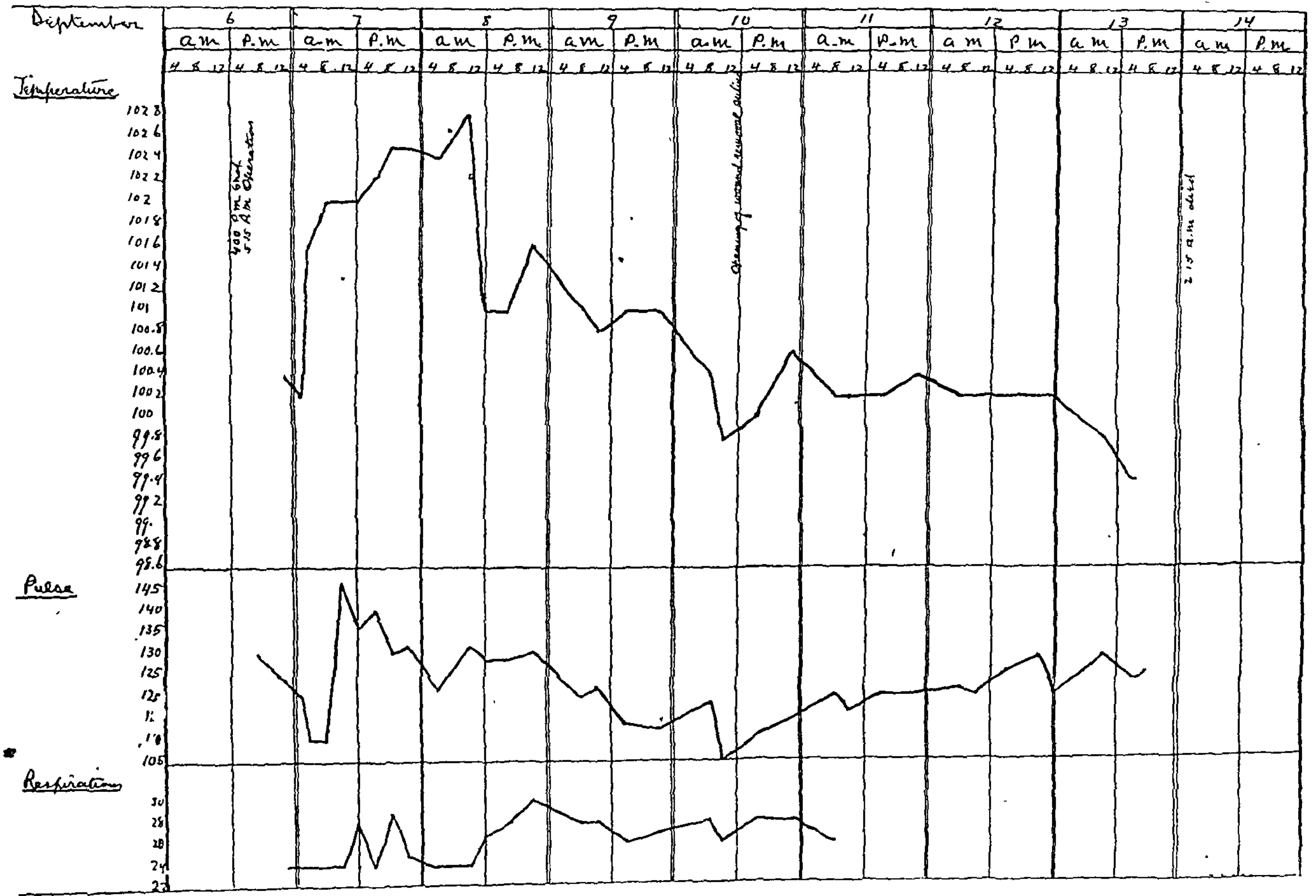
10 P. M.—The President's condition continues favorable. Blood count corroborates clinical evidence of absence of any

blood poisoning. He is able to take more nourishment and relish it. Pulse, 120; temperature, 100.4.—P. M. Rixey, M. D. Mann, Roswell Park, Herman Mynter, Eugene Wasdin, Charles McBurney, George B. Cortelyou, Secretary to the President.

Buffalo, September 12, 6:20 A. M.—The President has had a comfortable night. Pulse, 122; temperature, 100.2.—P. M. Rixey, George B. Cortelyou, Secretary to the President.

9:30 A. M.—The President has spent a quiet and restful night, and has taken much nourishment. He feels better this morning than at any time. He has taken a little solid food this morning and relished it. Pulse, 120; temperature, 100.2 degrees.—P. M. Rixey, Roswell Park, Herman Mynter, Eugene Wasdin, M. D. Mann, Charles McBurney, George B. Cortelyou, Secretary to the President.

3 P. M.—The President's condition is very much the same as this morning. His only complaint is of fatigue. He continues to take a sufficient amount of food. Pulse, 126; temperature, 100.2 degrees.—P. M. Rixey, M. D. Mann, Roswell Park, Herman Mynter, Eugene Wasdin, George B. Cortelyou, Secretary to the President.



Temperature, Pulse and Respiration Chart of the Case of President McKinley made from Official Bulletins.

8:30 P. M.—The President's condition this evening is not quite so good. His food has not agreed with him and has been stopped. Excretion has not yet been properly established. The kidneys are acting well. His pulse is not satisfactory, but has improved in the last two hours. The wound is doing well. He is resting quietly. Temperature, 100.2; pulse, 128.—P. M. Rixey, M. D. Mann, Roswell Park, Herman Mynter, Eugene Wasdin, Charles G. Stockton, George B. Cortelyou, Secretary to the President.

12 M.—All unfavorable symptoms in the President's condition have improved since the last bulletin. Pulse, 120; temperature, 100.2.—P. M. Rixey, Eugene Wasdin, Charles G. Stockton, George B. Cortelyou, Secretary to the President.

Buffalo, September 13, 2:50 A. M.—The President's condition is very serious and gives rise to the gravest apprehension. His bowels have moved well, but his heart does not respond properly to stimulation. He [illegible] ous. The skin is warm and the pulse small, regular [illegible] 126; respiration, 30; temperature, 100.—P. M. Rixey, M. D. Mann, Roswell Park, Herman Mynter, Eugene Wasdin, Charles G. Stockton, George B. Cortelyou, Secretary to the President.

9 A. M.—The President's condition has somewhat improved during the past few hours. There is a better response to stimulation. He is conscious and free from pain. Pulse, 128; temperature, 99.8.—P. M. Rixey, M. D. Mann, Roswell Park, Herman Mynter, Eugene Wasdin, Charles G. Stockton, George B. Cortelyou, Secretary to the President.

2:30 P. M.—The President has more than held his own since morning, and his condition justifies the expectation of further improvement. He is better than yesterday at this time. Pulse, 123; temperature, 99.4.—P. M. Rixey, M. D. Mann, Herman Mynter, Eugene Wasdin, Charles G. Stockton, George B. Cortelyou, Secretary to the President.

4 P. M.—The President's physicians report that he is only slightly improved since the last bulletin. The pulse and temperature remain the same as at that hour.—George B. Cortelyou, Secretary to the President.

5:35 P. M.—The President's physicians report that his condition is grave at this hour. He is suffering from extreme prostration. Oxygen is being given. He responds to stimulants but poorly. Pulse, 125; respiration, 40.—George B. Cortelyou, Secretary to the President.

6:30 P.M.—The President's physicians report that his condition is most serious in spite of vigorous stimulation. The depression continues and is profound. Unless it can be relieved the end is only a question of time.—George B. Cortelyou, Secretary to the President.

9:30 P. M.—"The President is dying."

Buffalo, September 14, 2:15 A. M.—"The President is dead."

Buffalo, September 14.—Autopsy.—The bullet which struck over the breastbone did not pass through the skin and did little harm. The other bullet passed through both walls of the stomach near its lower border. Both holes were found to be perfectly closed by the stitches, but the tissue around each hole had become gangrenous. After passing through the stomach the bullet passed into the back walls of the abdomen, hitting and tearing the upper end of the kidney. This portion of the bullet track was also gangrenous, the gangrene involving the pancreas. The bullet has not yet been found. There was no sign of peritonitis or disease of other organs. The heart walls were very thin. There was no evidence of any attempt at repair on the part of nature, and death resulted from the gangrene which affected the stomach around the bullet wounds as well as the tissues around the further course of the bullet. Death was unavoidable by any surgical or medical treatment, and was the direct result of the bullet wound.—Harvey D. Gaylord, M.D.; Herman G. Matzinger, M.D.; P. M. Rixey, M.D.; Matthew D. Mann, M.D.; Herman Mynter, M.D.; Charles Cary, M.D.; Edward L. Munson, Assistant Surgeon United States Army; Roswell Park, M.D.; Eugene Wasdin, M.D.; Charles G. Stockton, M.D.; Edward G. Janeway, M.D.; W. W. Johnston, M.D.; W. P. Kendall, Surgeon United States Army; Hermanus L. Baer, M.D.

Medical News.

[Because of the large amount of Educational matter, and likewise of that on the death of the President, a considerable portion of our regular Departments has been crowded out.]

ILLINOIS.

Dr. Andrew H. Kimbrough, Danville, is seriously ill as the result of a paralytic stroke.

The new hospital at Elgin, which was to have been opened September 1, by the Sisters of St. Joseph, is not yet ready, and the opening has been postponed indefinitely.

Smallpox is reported from East Hillsboro, and from Champaign County near Tolono. In the first case the infection is supposed to have been received at Alton, and in the second at Peoria.

Chenoa Doctors Raise Rates.—At a meeting of the physicians of Chenoa it was decided that to be in harmony with the physicians of McLean and Livingston counties all fees charged would be the same as agreed upon by the medical societies of the two counties.

Personal.—Dr. Babcock Meloy has succeeded to the practice of the late Dr. Katharine Miller, Lincoln.——Dr. William C. Dixon, Terre Haute, has moved to Canton.——Dr. Emerson M. Sutton, Peoria, has returned from Europe.——Dr. Isaac B. Ennis, Martinton, has located in Gilman.——Dr. J. Frank Wilson, Versailles, has moved to Bluffs.——Dr. Edmund Ludlow, Paxton, has gone to Denver, Colo., to practice.——Dr. Edward D. Howland, Lockport, has moved to Chicago.——Dr. William K. Farley, Waterman, has gone to Oregon.——Dr. and Mrs. William D. Nelson, Jr., Marietta, have gone to Europe for study.——Dr. Edward C. Lemen, Jr., Upper Alton, has been commissioned assistant surgeon of Volunteers, with the rank of captain, and assigned to the Eighth Infantry, U. S. army.

Chicago.

The Chicago Eye, Ear, Nose and Throat Hospital has provided a number of free beds for charity patients.

To Sterilize Pencils.—Dr. Arthur R. Reynolds, commissioner of health, has recommended the sterilization of pencils used in the public schools.

Baptist Hospital Changes.—Dr. Reuben Peterson has resigned as gynecologist, and Dr. Palmer Findley has been appointed in his stead.——Dr. A. E. Halstead has been appointed to the surgical staff and Dr. Charles E. Paddock obstetrician.

Scarlet Fever in Rogers Park.—There are now 55 cases of scarlet fever in this suburb with two deaths, and the Health Department has been forced to threaten to station policemen at the doors of infected houses unless the quarantine is more strictly observed.

New Hospital.—The new hospital of the Sisters of Mary, erected at a cost of $250,000, is nearing completion. The structure is six stories high, fire-proof, of cut stone and pressed brick, with strikingly high porticoed entrances. The ground dimensions are 196 by 87 feet. The operating rooms are on the top floor. On the north and south sides of the building are inclosed porches, which can be so heated as to be habitable the year around.

Personal.—Dr. Robert A. McArthur has returned from his summer vacation.——Dr. James Nevins Hyde has returned from his summer vacation in Salem.——Dr. and Mrs. Julian E. Hequembourq have returned from a month's visit to the Massachusetts coast.——Dr. Emma Morgan has located in Rock Island.——Dr. Paul E. N. Greeley has moved to Waterman.——Dr. James M. Lyons has opened an office in Lockport.——Dr. H. R. Struthers has located in Martinton.

Banquet to Dr. N. S. Davis, Sr.—The Chicago Medical Society is arranging to tender a banquet to Dr. N. S. Davis, at the Auditorium Hotel, Chicago, Saturday evening, October 5. Dr. Davis is the oldest living ex-president of the Society, one of the founders and the oldest living ex-president of the American Medical Association, widely known and highly respected by the profession of the whole country, and a man who has always stood out for the best interests of the American medical profession. He deserves all the honors that any society can confer on him.

Anthrax.—The recent outbreak of anthrax at Palatine, and its increasing prevalence in the surrounding country, which is largely devoted to dairying interests, prompted the health commissioner to send the secretary of the department, together with one of its meat inspectors—an expert veterinarian—to that section to investigate the existing conditions. As a result, and at the suggestion of the representatives of the department, the farmers throughout the infected district have formed a local association for the purpose of stamping out the disease and preventing its further spread. This association, through its officers, has pledged the department that no milk or veal calves or beef cattle will be shipped from any of the infected herds. In view of these pledges, and the thoroughly reliable character of the men who made them, it was not deemed necessary on the part of the city to establish any quarantine against the food supplies from this district. It is believed that with the enforcement of the measures now under way the present outbreak will soon be under control.

The Smallpox Situation.—The Health Department points out that in the group of states of which Illinois is the center and with which Chicago is in most immediate and constant communication, there have been, during the first 36 weeks of this year, a total of 15,373 cases of smallpox reported, as against a total of only 5620 cases reported during the corresponding period of 1900. This is an increase of 273 per cent. in Northwestern states as against an increase of less than 75 per cent. in the rest of the country. In the state at large, outside of Chicago, there have been fewer cases—229—this year than last—250—but in the city itself there have been 248 cases this year, as against only 51 last year. This great increase—nearly five times more than last year—is due, of course, to the repeated importations from the surrounding infected territory, and while no new case has been discovered since August 12, and the city has been free from the disease since August 28, it is not to be expected that further importations can be prevented during the fall and winter. The experience in New York City forbids such hope; there they have had this year, up to the close of August, 1831 cases and 370 deaths—as against Chicago's 248 cases and 2 deaths. The lesson of these facts and figures is that Chicago is more exposed now than a year ago, and that individuals not properly protected by vaccination are in greater danger of contracting smallpox now than then.

INDIANA.

Typhoid fever in Muncie is reported to be much more fatal than usual and, it is said, is not water but mosquito borne.

Dr. Brose S. Horne, Bluffton, has been appointed physician of the state penitentiary at Michigan City, vice Dr. Alva L. Spinning, resigned.

A Methodist hospital and deaconess' home to cost not less than $200,000 is to be built in Indianapolis on land recently purchased at 29th and Illinois streets.

Dr. Baker's Death.—The faculty of the Medical College of Indiana has passed resolutions expressing the loss sustained by the college in the death of Dr. Philip S. Baker, who for many years had held the chair of chemistry.

Personal.—Dr. Samuel M. Reid has resigned as city health officer of Muncie.—Dr. Brook B. Freeman, Valparaiso, is critically ill with dropsy.—Dr. Frank Songer, Hillsboro, who has been ill for five months, will spend the winter in Florida.—Dr.

Frank H. Wilcox, New Albany, has been elected township physician.

KANSAS.

Smallpox.—The Secretary of the State Board of Health reports that at the end of August there were less than a dozen cases of smallpox in the state, in five localities. On September 2 two new cases of the disease were discovered in Topeka.

Personal.—Dr. B. W. Toothaker will remove from Westmoreland to St. Joseph, Mo.—Dr. Edward Trachsell, Meriden, has moved to Denver, Colo.—Dr. Carroll Montgomery has decided to remain in Manhattan, and assume charge of the practice left by his father.

New Medical Law.—The registration of physicians prior to the date the new medical law went into effect amounted to 2300 of the 2600 physicians estimated to be in the state. Of these about 1600 presented diplomas from reputable medical colleges; 100 had certificates from other states; 400 were admitted under the seven-year practice clause and the remainder took the prescribed examination.

MICHIGAN.

A "Christopathic" sanatorium is the latest addition to the roll of sanatoria in Battle Creek.

Personal.—Dr. D. E. Newcomb, Carleton, was stricken with paralysis September 6, and is in a precarious condition.—Dr. Abiel S. Martin, Vicksburg, intends to locate in Otsego. —Dr. P. H. Wilson, Hancock, has been appointed physician to Baltic mine.

Transportation of Bodies.—At a special meeting of the State Board of Health a rule was adopted providing that all bodies, without regard to cause of death, will be subject to transportation, when prepared by licensed embalmers in accordance with the rules of the State Board. In all states with the exception of Michigan, the transportation of bodies dead from smallpox, Asiatic cholera, yellow fever, typhus fever or bubonic plague, is absolutely forbidden. By permitting the transportation of such bodies in Michigan, the qualifications of licensed embalmers are recognized. The detailed rules in caring for such bodies will insure the public health against contagion from these bodies.

NEW YORK.

Personal.—Dr. Homer E. Smith, Norwich, has returned from his trip to South America.—Dr. Homer C. Tarbell, West Groton, has opened an office in Groton.—Dr. James King, Buffalo, who has been in Vienna for the past five months, is now in London, England.

State Antitoxin Laboratory.—A building has been secured for the establishment of a state antitoxin laboratory in Albany and Dr. H. D. Pease, of the Sheffield Scientific School, Yale University, has been appointed director. The animal house will be provided with the most perfect hygienic conditions attainable for such purposes, and will be supplied with about 15 horses for the manufacture of serum. The Commissioner of Health proposes to supply state institutions with diphtheria and other antitoxins free of cost, and also to furnish these remedies to municipalities in the state which are not already provided with a similar laboratory. These new departments are intended to supply to all the health officers throughout the state the same facilities for investigation, diagnosis and treatment of infectious diseases now afforded by the city of New York.

Mortality of New York.—According to the state health department's report for July, New York City reported 1155 deaths from insolation and in the entire state 1283 deaths were ascribed to the effects of heat. There were 8 deaths reported from lightning stroke, and 111 deaths occurred from drowning, altogether making over 2000 deaths attributed to accidents and violence, much beyond any former record. The rural death rate was 13 per 1000 population, the urban being 23, while that of the entire state was about 20. There were 400 deaths from pneumonia out of 602 from all acute respiratory diseases, and of 400 deaths from diseases of the urinary system, outside of New York City, 240 were from Bright's disease. Smallpox is reported as causing 89 deaths, a number in excess of that of any heretofore recorded, 74 having occurred in June; of these, 80 occurred in New York City, where about 250 new cases developed during July, the last four weeks showing a decrease.

Buffalo.

Census Statistics.—In New York City there are 638,045 foreign born males and 632,035 foreign-born females. In the entire city there are 33,587 colored males, of which 27,132 are negroes, and 33,717 females, of whom 33,534 are negroes. The same locality presents in return native males 1,067,660, and native females 1,099,462. The exact enumeration in the case of the four boroughs of New York City is given without materially disturbing the ratio of the percentages, barring the colored element.

OHIO.

Medical Colleges Open.—Ohio Medical University, Columbus, opened September 11, with 197 new students registered and more than 400 present at the opening exercises.—Starling Medical College opened the same day with an initial registration exceeding one hundred.

Personal.—Dr. Kate M. Johnson has opened an office in Wooster.—Dr. E. B. Davis has located in Covington.—Dr. Johnson S. Hunter, Piketon, has moved to Jackson.—Dr. Luther Schofield has moved from White House to Maumee.—Dr. David H. Biddle has moved from Haydenville to Athens.—Dr. O. S. Wood, Pomeroy, has located in Haydenville.

Grand Army Medical Arrangements.—The medical committee for Grand Army week at Cleveland was made up of two corps of physicians; the first a consultant body and the second an active medical corps of relief. Dr. George C. Ashmun was chairman of the committee. The consulting body was composed of 24 physicians, some of whom were constantly on duty at headquarters. The medical corps of relief was made up of 32 physicians who answered telephone calls from all parts of the city. The committee provided 19 ambulances, which were stationed at intervals along the line of march.

PENNSYLVANIA.

Typhoid fever is reported to be epidemic at Bolivar.

Anthrax is raging among cattle on Loyalsock Creek, and two persons at Laporte have been infected.

A physician of Bismarck has been arrested by order of the president of the Cornwall Township school board, charged with having neglected to report a case of smallpox.

Personal.—Dr. James Mitchell has returned from his service with the army in the Philippines and will open an office in Lancaster.—Dr. W. S. Bertelot has located for practice in Reading.

A patent medicine vender of Washington, D. C., who was tried at Chambersburg for practicing and prescribing medicine without a license, was acquitted on the technicality that she had not opened an office.

Dr. Miller Honored.—Philadelphia professional friends of Dr. John S. Miller, Denver, Col., who was formerly one of the demonstrators of anatomy in the Jefferson Medical College and surgeon to St. Joseph's Hospital, Philadelphia, tendered him a dinner, September 10. Professor Francis X. Dercum, of Jefferson Medical College, presided and acted as toastmaster.

Medico-Chirurgical Hospital Improvements.—At a cost of $70,000 extensive improvements have been begun to the Medico-Chirurgical Hospital, Philadelphia, which will be completed in October. The infirmary will be moved into the new building at Seventeenth and Cherry streets, which is now practically finished. The old dental laboratories will also be moved from the rear of the hospital into the new building, and will be made into a dormitory for nurses. The old laundry adjoining the accident room will be discontinued, and this, together with the present dispensary, will be made into a new receiving ward for the treatment of emergency cases. Two new refrigerating plants are to be installed.

MARYLAND.

Dr. J. Walter Sims, Cooksville, has been indicted for not reporting to the State Board of Health the existence of smallpox in his neighborhood.

Typhoid fever is epidemic in Cumberland County. The local board of health attributes the spread of the disease to flies and has informed residents that they must make war on the flies, which, it believes, carries the disease from house to house.

Personal.—Dr. Albert K. Hadel, Baltimore, is at Cape May.——Dr. William Oakley Haines, Baltimore, has gone to Canada.——Dr. Thomas Sudler, Baltimore, former city councilman, has been presented with a handsome silver service.——Dr. Sewell S. Hepburn, Jr., West River, has moved to Annapolis.

Nurses for the Insane.—The recommendation of Dr. J. Clement Clark, superintendent, that a training school for nurses be established at Springfield State Hospital for the Insane, was adopted at the last meeting of the Board of Directors. There are 20 male and 16 female nurses who will be instructed on the treatment and care of the insane by the medical staff and supervisors. The course will be a two years' one, and a certificate and increase of salary is to be given to the graduates. There were in the hospital, August 31, 328 patients, 231 male and 97 female.

Site for Isolation Hospital.—Health Commissioner Bosley has been authorized to secure an option on ten acres of land on the Reisterstown road near Pimlico and West Arlington, as the site for the Municipal Hospital for infectious diseases. Dr. Bosley's idea is to erect several different buildings on the property, thus keeping the patients suffering from one infectious disease separated as much as possible from those with others. To do this it is estimated the commission will need considerable more money than the $25,000 which has been provided, and an additional appropriation will be included for this purpose in the ordinance of estimates for the year 1902.

CANADA.

Physician Arrested.—A Toronto doctor was arrested on the 13th, charged with procuring an abortion.

Huron Medical Association.—The regular quarterly meeting of this Association was held at Clinton, Ontario, on September 6. Dr. William Graham, presided, and Dr. J. W. Shaw acted as secretary.

College of Physicians and Surgeons, Quebec.—Sixteen physicians will represent the District of Montreal on this Board for the ensuing year, thirteen the District of Quebec, three the District of Three Rivers, and three the District of St. Francis.

Personal.—Dr. Laberge, medical health officer of Montreal, has started for Germany.——Dr. W. H. P. Hill, who has just completed his term as house surgeon at the Montreal General Hospital, has gone to Europe prior to entering upon practice in Montreal.

Montreal General Hospital.—The medical staff of the Montreal General Hospital for the ensuing year will be made up as follows: Dr. von Eberts, medical superintendent, and Drs. Turner, Secord, Robertson, Campbell, Howard, Bruce, Brown, Rogers and Ker as house surgeons.

Dr. Montizambert, director of public health, has handed in his report to the Minister of Agriculture on the recent Tuberculosis Convention at London. It is understood that the report combats Professor Koch's theory that bovine tuberculosis is not transmissible to human beings.

Dowieites Arrested.—A special dispatch from Victoria, B. C., dated the 12th inst., states that an elder of the Dowieite persuasion and one of his disciples have been arrested on a charge of manslaughter for refusing to provide proper medical assistance for the infant child of the latter.

Bacteria in Cheese.—On account of frequent complaints as to certain cheese being "off" flavor, Professor Harrison, bacteriologist of the Ontario Agricultural College, was ordered by the government to investigate, and he has found a species of bacteria which he thinks is responsible for the trouble.

Toronto Druggists to Meet.—There is to be held on the 19th inst., a general meeting of the retail druggists of Toronto for the purpose of considering relations with the proprietary trade. It is understood that a number of the druggists of the city are in favor of cutting adrift from patent medicines.

Collapsed in the Witness Box.—Two years ago Dr. J. H. Morrison, an oculist of St. John, N. B., was injured in a street railway accident in that city. He sued the company for $60,000, and after various delays the suit came up for trial during the past week. While under examination the doctor collapsed from nervous strain and is now said to be at the point of death. Dr. Morrison was for many years inspector of schools in Manitoba.

Doctor Appeals to the Courts.—Dr. H. C. Dumont, who has been denied a license to practice in the Province of Quebec, has been granted a petition for a writ of mandamus by Mr. Justice Langelier against the College of Physicians and Surgeons of that province. The writ of mandamus orders the College to issue the license. Five or six cases of a similar nature were decided in Quebec last year in a similar manner. The College will take the case through the Court of Appeal, and, if necessary, to higher courts.

St. Francis Medical Association.—This Association held its regular meeting on Thursday, the 13th inst. Dr. McCabe, of Windsor Mills, was recommended to the position of joint coroner of the district in succession to the late Dr. McMorrine. Dr. P. Pelletier reported that it was the intention of the Quebec Provincial Board of Health to take steps to instruct the people in hygiene, and that a convention would be held shortly at Sherbrooke in this connection. He asked the support of the Association for this movement. The following officers were elected for the ensuing year: President, Dr. J F. Rioux, Sherbrooke; first vice-president, Dr. W. D. Smith, Sherbrooke; second vice-president, Dr. McCabe, Windsor Mills; honorary secretary, Dr. Russell Thomas, Lennoxville.

War on the Ontario Medical Council.—A meeting of the executive committee of the Medical Defense Association, which it will be understood has nothing to do with defending practitioners from suits for alleged malpractice, and is no part nor parcel of the organization recently perfected at the Canadian Medical Association meeting—the Physicians' Protective Association—was held recently in Toronto, when a sub-committee of publication was appointed to supervise the issuing of a short series of letters to the public press setting before the profession, the public and the legislature of the province the disabilities under which the medical profession in Ontario is supposed by the members of this Association to be resting. Dr. J. H. Sangster, of Port Perry, has undertaken to do this work at the urgent and unanimous wish of his executive committee: and for the next month or two the officials of the Medical Council will be kept busy reading what Dr. Sangster thinks of that august body.

British Columbia Medical Association.—The second annual meeting of this Association was held at Victoria on the 5th and 6th inst. and there was a good representation of the profession from the province. Several eastern physicians came on from the meeting of the Canadian Medical Association at Winnipeg. On the forenoon of the first day the delegates were taken by special steamer to the William Head quarantine station, which was inspected. In the afternoon, Dr. John Dunc, the president, delivered the annual presidential address [illegible]ory of medicine from his student days. D[illegible], of Nanaimo, read a paper on midwifery, which provoked an interesting discussion. On the afternoon of the 6th the visitors were taken to D'Arcy Island, where the lepers were inspected. In the forenoon, Dr. Fagan read a paper on tuberculosis, and in the evening a banquet was held at the Driad. The following officers were elected for the ensuing year: President, Dr. Walker, New Westminster; vice-president, Dr. Helmcken; secretary, Dr. Pearson, Vancouver.

Deaths and Obituaries.

John Eliot Woodbridge, M.D., Charity Hospital Medical College, Cleveland, Ohio, 1866, a member and former trustee of the American Medical Association, died at Bad Nauheim, Germany, from heart disease, August 31, aged about 55. After graduation he practiced for a time in Kentucky and as an acting assistant surgeon in the army. In 1870 he settled in Youngstown, Ohio, where he speedily gained a large practice. It was in 1884 that he first began to experiment with the treatment for typhoid fever, which has since been known by his name, and for a time attained a measure of popularity with the profession. At the outbreak of the Spanish-American war he entered the Volunteer army as major and surgeon and was placed in charge of the hospital at Fort Meyer. A year ago, to regain his health he went abroad, spent the winter in Egypt and then went to Bad Nauheim, where he died.

Gustav Schiff, M.D., University of Würzburg, Germany, 1856, who had practiced in Chicago, Nashville, Dallas and San Francisco; served throughout the Civil war, and labored heroically during the Tennessee cholera epidemics of 1866 and 1873, died at his home in San Francisco, September 2, from Bright's disease, aged 68.

John M. Meyer, M.D., Transylvania University, Lexington, Ky., 1843, the oldest practicing physician in Kentucky, and a member of the American Medical Association, who had been in declining health for some time, died at his home in Danville, September 5, aged 84.

Philip Schaffner Baker, M.D., Medical College of Indiana, Indianapolis, 1879, professor of chemistry in De Pauw University, Greencastle, Ind., and known throughout the country as an educator, died at Asheville, N. C., September 2, from tuberculosis, aged 50.

Conrad R. Ohlinger, M.D., Ohio Wesleyan University, Cleveland, 1898, of Cleveland, acting assistant surgeon, U. S. Army, was drowned while returning from a scouting expedition in the Pambugan Mountains, Samar, Philippine Islands, August 20.

Sidney Rogers Burnap, M.D., College of Physicians and Surgeons, New York, 1862, a prominent physician of Windsor Locks, Conn., died at his home in that place, September 3, from brain tumor, after an illness of several months, aged 68.

Edmund P. Duval, M.D., University of Pennsylvania, Philadelphia, 1847, a practitioner for 33 years in Maryland, and from 1880 to 1892 state librarian of Maryland, died at his home in Annapolis, September 5, aged 75.

Alonzo D. McComb, M.D., Western Reserve University, Cleveland, Ohio, 1880, for twenty years a practitioner of medicine in Hawthorne, Pa., died at his home in that place, September 5, from Bright's disease, aged 47.

Etienne Gosselin, M.D., Laval University, Quebec, 1883, a prominent physician of Quebec, died at his home in that city, September 6, from typhoid fever, after an illness of three weeks, aged 46.

Louis Warfield Ritchie, M.D., University of Georgetown, Washington, D. C., 1863, a veteran of the Civil war, died at his home in Washington, September 9, from Bright's disease, aged 58.

Charles F. Atwood, M.D., Bellevue Hospital Medical College, New York, 1879, died at his residence in Winterport, Maine, September 6, after an illness of two weeks, aged 45.

William Washington Rigby, M.D., Baltimore Medical College, 1892, died at his home in Spartanburg, S. C., from typhoid fever, after a long illness, September 4, aged 30.

Charles De Saussure Clarkson, M.D., Medical College of the State of South Carolina, 1890, died suddenly from apoplexy, at his home in Allendale, S. C., September 3, aged 35.

George Lewis Staley, Jr., M.D., College of Physicians and Surgeons, Baltimore, 1878, died at his home in Baltimore, September 9, after an illness of six weeks, aged 44.

Dennis B. Dorsey, M.D., College of Physicians and Surgeons, Keokuk, Iowa, 1891, died at his home in Braymer, Mo., September 2, after a prolonged illness, aged 71.

John R. Williams, M.D., Vanderbilt University, Nashville, Tenn., 1892, died at his home in Port Royal, Tenn., from typhoid fever, September 3, aged 33.

Samuel R. Owens, M.D., University of Tennessee, Nashville, 1886, died at his home near Somerset, Ky., August 29, aged 76.

Charles W. Adkins, M.D., University of Louisville, Ky., 1858, died at his home in Langston, Ala., September 4, aged 60.

J. M. Winn, M.D., died at his home in Forest City, Ill., September 5, aged 71.

Book Notices.

A Practical Treatise on Medical Diagnosis for Students and Physicians. By John H. Musser, M.D., Professor of Clinical Medicine in the University of Pennsylvania. Fourth Edition, Revised and Enlarged. Illustrated with 250 Woodcuts and 49 Colored Plates. Cloth. Pp. 1105. Price, $6.00. Philadelphia and New York: Lea Brothers & Co. 1900.

This excellent volume is well supplied with artistic and, for the most part, original illustrations, and the text is clear and concise. In this edition the author has introduced the latest acquisitions of medical research. His desire to make use, as much as possible, of methods of scientific precision, has placed the work facile princeps of its class. The treatise should find its way into the library of every practitioner and student, if it is not there already.

The Treatment of Fractures. By Charles Locke Scudder, M.D., Surgeon to the Massachusetts General Hospital, Out-Patient Department. Assisted by Frederick J. Cotton, M.D. Second Edition, Revised. With 611 Illustrations. Cloth. Pp. 457. Price, $4.50 net. Philadelphia and London: W. B. Saunders & Co. 1901.

That a second edition of this work should be necessary in less than a year speaks well for the manner in which the first edition was received by the profession. As the first edition was so recently reviewed in these columns, it will be necessary to mention here only the changes and additions which appear in this, the second edition. One of the most important changes is the introduction of a number of additional *x*-ray plates. The value of the *x*-ray plate in the diagnosis of many fractures can not be overestimated. The value, therefore, of the introduction of good *x*-ray plates of the various fractures in a work of this kind is very apparent. A series of clinical cases has also been introduced, which makes a fitting supplement to the chapter on skull fractures. The use of plaster-of-paris dressings in the treatment of fractures is particularly emphasized, and numerous excellent plates have been introduced illustrating the various methods of their application. The same excellent style has been maintained in the work, and the publisher's part equally well done.

Association News.

New Members.

The following is a list of new members of the American Medical Association for the month of August:

ALABAMA.
Westmoreland, H. D., Huntsville.

ARKANSAS.
MacCammon, Vernon, Arkansas City.
Graham, J. F., Hot Springs.

CALIFORNIA.
Cagliera, G. E., San Francisco.

CONNECTICUT.
Lynch, Robt. J., Bridgeport.

FLORIDA.
Bize, L. A., Tampa.

ILLINOIS.
Kilbourne, E. D., Chicago.
Sharpe, Anne McFarland, Jacksonville.
Stees, Marie J., Freeport.
Chapin, C. E., Bloomington.
Lucas, F. B., Peoria.
Hopkins. S. W., Walnut.
Heywood, C. W., Riverside.
Becker, E. C., Chicago.
Swan, C. F., Chicago.
Burdick. A. B., Chicago.
Melton, W. A., Jr., Warrensburg.

IOWA.
Beach, M. A., Carroll.
Stiles, F. N., Davenport.
Hoxie, W. E., Hampton.
Pollock, W. L., Boone.
Stalford, G. A., Latimer.
Russell, C. R., Ottumwa.
Smith, E. J., Harlan.
Cantwell, J. D., Davenport.

INDIANA.
Wolferman, A. Gertrude, Indianapolis.
Keller, F. G., Alexandria.

KANSAS.
Wever, J. S., Leavenworth.
Berry, J. A., Topeka.

KENTUCKY.
Wash, Bishop, Cornishville.
Bates, S. W., Sheperdsville.
Rodgers, J. F., Bowling Green.
Cain, C. E., Mt. Victory.

LOUISIANA.
McBride, R. E., Houma.
Ballowe, H. L., Diamond.

MASSACHUSETTS.
Packard. G. H., Medford.
Anderson, R. H., Fall River.

MICHIGAN.
Kay, W. J., Attica.

MINNESOTA.
Lynch, J. L., Winona.
Egge. T. S., Moorhead.
Bagley, W. R., Duluth.

MISSOURI.
Paris, R. W., Lawrenceburg.
Gaines, J. J., Liberty.
Thorpe, J. L., Jefferson City.
McHenry, D. D., Princeton.

NEBRASKA.
Hepperlen, H. M., Beatrice.

NEW HAMPSHIRE.
Robb, W. M., Marlow.

NEW YORK.
Merenna, Giovanni, Brooklyn.
Marsh, J. P., Troy.
Rood, Edgar, Westfield.
Tieste, L. E., Brooklyn.
Distler, L. G., Westtown.
Preston, A. W., Middletown.
Pomeroy, S. G., W. Oneonta.
Burkelman, A., New York City.
Preston, J. L., Kingston.
McGuire, F. W., Buffalo.

OHIO.
Haefele, G. L., Peninsula.

PENNSYLVANIA.
Ford, F. A., Altoona.
Berry, E. S., Shippensburg.

SOUTH DAKOTA.
Wood, T. J., Huron.

TENNESSEE.
Todd, J. D., Trerevant.

TEXAS.
Parker, W. S., Calvert.
Atkins, W. E., Pilot Point.
Norsworthy, O. L., Houston.
Chapman, H. J., San Antonio.
Barr, H. A., Beaumont.

UTAH.
Noyes, J. F., Am. Fork.

VIRGINIA.
Strickland, J. T., Roanoke.

WASHINGTON.
MacLeod, A. F., Spokane.

WISCONSIN.
Wayman, Sarah M., Baraboo.
Klemm, L. F., Milwaukee.
Mason, C. H., West Superior.
Coon, J. W., Milwaukee.
Minshall, A. P., Viroqua.

Miscellany.

Medical Corps of the U. S. Army. Information for Candidates Seeking Appointment.

The Medical Corps of the Army, as increased from a total of 192 to 321 medical officers by recent Congressional action, consists of a Surgeon General with the rank of brigadier general, eight Assistant Surgeons General with the rank of colonel, twelve Deputy Surgeons General with the rank of lieutenant colonel, sixty Surgeons with the rank of major, and two hundred and forty Assistant Surgeons with the rank of first lieutenant, mounted, for the first five years, and the rank of captain, mounted, thereafter, until promoted to major. Section 1172, Revised Statutes of the United States, provides that "No person shall receive the appointment of Assistant Surgeon unless he shall have been examined and approved by an Army Medical Board, consisting of three Surgeons or Assistant Surgeons, designated by the Secretary of War; and no person shall receive the appointment of Surgeon unless he shall have served at least five years as an Assistant Surgeon in the Regular Army, and shall have been examined and approved by an Army Medical Board, consisting of not less than three Surgeons, designated as aforesaid." The act to increase the efficiency of the military establishment of the United States, recently approved, further provides "That the period during which any Assistant Surgeon shall have served as a Surgeon or Assistant Surgeon in the Volunteer Army during the war with Spain or since shall be counted as a portion of the five years' service required to entitle him to the rank of captain. All vacancies are filled by appointment to the junior grade (first lieutenant). Promotion through the intermediate grades of rank from that of captain to that of colonel is by seniority, but there is an examination for the rank of captain and another for that of major, to ascertain the fitness of the officer for promotion. Advancement to lieutenant colonel and colonel takes place without further examination. The Surgeon General is selected by the President from among the members of the corps.

Pay and Emoluments.—To each rank is attached a fixed annual salary, which is received in monthly payments, and this is increased by 10 per cent. for each period of five years' service until a maximum of 40 per cent. is reached. An Assistant Surgeon with the rank of first lieutenant, mounted, receives $1600 per annum, or $133.33 monthly. At the end of five years he is promoted to captain and receives $2000 a year, which, with the increase of 10 per cent. for five years' service, is $2200, or $183.33 per month. After ten years' service as captain the pay would be $2400 annually, or $200 per month. The pay attached to the rank of major is $2500 a year, which, with 10 per cent. added for each five years' service, becomes $3000 after 10 years' service, $3250 after fifteen years and $3500 after twenty years. The monthly pay of lieutenant colonel, colonel, and brigadier general is $333.33, $375, and $458.33 respectively. Officers in addition to their pay proper are furnished with a liberal allowance of quarters according to rank, either in kind, or, where no suitable Government building is available, by commutation. When traveling on duty an officer receives mileage for the distance traveled; the amount allowed is sufficient to cover all expenses of journey. On change of station he is entitled to transportation for professional books and papers and a reasonable amount of baggage at Government expense. Mounted officers, including all officers of the Medical Corps, are provided with forage, stabling, and transportation for horses owned and actually kept by them, not exceeding two for all ranks below a brigadier. Groceries and other articles may be purchased from the Commissary and fuel from the Quartermaster's Department at about wholesale cost price. Instruments and appliances are supplied in abundance for the use of medical officers in the performance of their duties. Well selected professional libraries are supplied to each hospital and standard modern publications on medical and surgical subjects are added from time to time; current issues of a number of representative medical journals are also furnished for use of medical officers.

Army Medical School.—In 1893 the Secretary of War authorized the establishment of an Army Medical School in the city of Washington for the purpose of instructing medical officers who have been appointed since the last preceding term of the school, and such others as may be authorized to attend.

The course of instruction is for five months, and will be given annually, when practicable, at the Army Medical Museum, in Washington City, commencing in November. Five professors are selected from among the senior medical officers of the Army, stationed in or near the city of Washington, also an instructor in first aid and ambulance drill. . . .

Duties and Privileges.—Leave of absence on full pay is allowed at the rate of one month per year, and this when not taken may accumulate to a maximum of four months, which at the end of four years is then available as one continuous leave. Beyond this an officer may still be absent with permission on half pay. Absence from duty on account of sickness involves no loss of pay.

Medical officers are entitled to the privilege of retirement at any time for disability incurred in the line of duty, or after forty years' service. On attaining the age of sixty-four they are placed upon the retired list by virtue of law. Retired officers receive three-fourths the amount of their pay proper at the time of retirement.

When medical officers with the rank of captain approach the period of their examination for promotion to a majority they are usually assigned to duty as attending surgeons in the principal medical centers of the United States, to enable them to become familiar with the practice of the leading physicians and surgeons in this country, and to attend medical lectures, meetings of medical societies, etc. These assignments are made for one year only, in order that as many medical officers as possible may be enabled to avail themselves of the advantages thereby afforded. At the end of this tour of duty they are required to make a detailed report to the Surgeon General showing how much of their time has been occupied by their official duties and to what extent they have availed themselves of the advantages offered for professional advancement. . . .

Examination.—Permission to appear before the Board is obtained by letter to the Secretary of War, which must be in the handwriting of the applicant, giving the date and place of his birth and the place and State of which he is a permanent resident, and inclosing certificates, based on personal acquaintance, from at least two reputable persons as to his citizenship, character, and habits. The candidate must be a citizen of the United States, between twenty-two and twenty-nine years of age, in the case of a candidate applying for appointment from civil life, and between twenty-two and thirty-four years of age in the case of a candidate who has served honorably in the Army of the United States, either as a commissioned medical officer of volunteers or as an Acting Assistant Surgeon during the war with Spain or since. He must be of sound health and good character, and a graduate of some regular medical college, in evidence of which his diploma will be submitted to the Board. The scope of the examination includes the morals, habits, physical and mental qualifications of a candidate, and his general aptitude for service; and the Board will report unfavorably should it have a reasonable doubt of his efficiency in any of these particulars. The physical examination comes first in order, and must be thorough. Candidates who fall below sixty-four inches in height will be rejected. Each candidate is also required to certify "that he labors under no mental or physical infirmity or disability which can interfere with the efficient discharge of any duty which may be required." Errors of refraction, when not excessive, and not accompanied by ocular disease, and when correctible by appropriate glasses, are not causes for rejection. The professional examinations are conducted by both written and oral questions, upon anatomy, physiology, chemistry, hygiene, pathology and bacteriology, therapeutics and materia medica, surgery, practice of medicine, obstetrics and the diseases of women and children. Examinations are also conducted at the bedside in clinical medicine and surgery, and operations and demonstrations are required to be made by the candidate upon the cadaver. Hospital training and practical experience in the practice of medicine, surgery, and obstetrics are essential to candidates seeking admission to the Medical Corps of the Army, who will be expected to present evidence that they have had at least one year's hospital experience, or the equivalent of this in practice. Candidates presenting a degree in arts, sciences (other than medicine) or literature, those who hold first-class teachers' certificates or who submit evidence of graduation from a reputable high school or similar institution (approved by the Board), will not usually be examined in other than the professional subjects enumerated above. Should a candidate, during his professional examination by the Board, present evidence of a deficiency in his general education in elementary subjects, he may be required to undergo an oral examination in arithmetic, history, geography, literature, and physics, and such examination, if unsatisfactory, will be cause for his rejection. Candidates claiming especial knowledge of the higher mathematics, ancient or modern languages, drawing, analytical chemistry, or branches of natural science, will be examined in those subjects as accomplishments and will receive due credit therefor according to their proficiency. To save unnecessary expense to a candidate desiring a preliminary physical examination, written authority may be given by this office for him to present himself at the nearest military post, garrison, or recruiting station for such examination. Any opinion given as to the result of such preliminary examination must, however, be considered as purely advisory and not as determining the subsequent action of an Army Medical Board in the case.—Circular of the Medical Department.

Intellectual Precocity Among Physicians.—The *Semaine Médicale*, in a recent review of this subject, has been able to collect only five instances of unusual intellectual precocity among physicians. One of these, Goethe, never completed the medical course. Cardan was an Italian physician in the sixteenth century who graduated and commenced teaching at 22. Boerhaave, the great Dutch physician, 1668-1738, was proficient in Greek and Latin when he was 11, but did not commence his medical studies until the age of 22. His famous pupil, A. von Heller, received his medical degree at 19. At 10 the latter composed a Hebrew and a Chaldean grammar for his own use, and at 15 had written several comedies, tragedies and an epic of 4000 verses. In our own day Flourens, best known for his physiologic researches, received his medical degree at 19. Oliver Wendell Holmes, while yet in his 'teens, wrote the poem "Old Ironsides," which prevented the breaking up of that historical vessel.

Societies.

Medical Society of the State of Pennsylvania, Philadelphia, Sept. 24-26, 1901.
American Electro-Therapeutic Association, Buffalo, Sept. 24-26, 1901.
Oregon State Medical Society, Portland, Sept. 25-27, 1901.
Utah State Medical Society, Provo City, Oct. 1-2, 1901.
Idaho State Medical Society, Pocatello, Oct. 3-4, 1901.
Tri-State Medical Society of Alabama, Georgia and Tennessee, Nashville, Tenn., Oct. 8-10, 1901.
Wyoming State Medical Society, Evanston, Oct. 8-9, 1901.
Vermont State Medical Society, Montpelier, Oct. 10-11, 1901.
New York State Medical Association, New York City, Oct. 21-24, 1901.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Twenty-seventh Annual Meeting, held at Put-in-Bay Island, Ohio, September 12-14, 1901.

Election of Officers.

The following officers were elected for the ensuing year: President, Dr. S. P. Collins, Hot Springs, Ark.; first vice-president, Dr. J. C. Culbertson, Cincinnati, Ohio; second vice-president, Dr. Paul Paquin, Asheville, N. C.; secretary, Dr. Henry E. Tuley, Louisville, Ky.; and treasurer, Dr. Thomas H. Stucky, Louisville, Ky.

Death of President McKinley.

The following resolutions were offered:

"Our President is dead. Our President, who accomplished the unification of our country; the abolition of sectional lines; the expansion which made us a world power, his last public utterance being in favor of peace, international reciprocity and sympathy, has been removed by the enemies of Society.

"We are overwhelmed with sorrow and personal grief for the death of the greatest of the world's rulers; for one who, from the standpoint of statesmanship, political foresight, sympathy with all the people, morality, the sweetest features of personal character and home-life, appealed to the appreciation of and affections of every citizen.

"A professional sorrow and disappointment taking the place of a hope that had inspired us from the first day the nation's calamity overwhelmed us.

"Joining in the personal grief and bereavement from which every true and loyal American citizen is this day suffering, we, the members of the Mississippi Valley Medical Association, in our twenty-seventh annual meeting assembled, do postpone the further presentation and consideration of special papers, in token of the love and respect with which we shall ever cherish the memory of our martyred President, William McKinley.

"(Signed.)
ANDRUS TIMBERMAN, M.D.
H. O. WALKER, M.D.,
I. N. LOVE, M.D.
Committee."

On account of the death of President McKinley, a motion was made and unanimously adopted by a rising vote, that the papers listed for the third day be read by title, referred to the Committee on Publication, and that the Association adjourn out of respect to the distinguished dead.

(To be continued.)

CALIFORNIA ACADEMY OF MEDICINE.

Regular Meeting held Aug. 27, 1901.

Dr. D. W. Montgomery, in the chair.

X-Ray Dermatitis.

DR. T. W. HUNTINGTON presented a man 35 years of age, who during last October was subjected to the *x*-rays several times, the result being an extensive dermatitis over the right rectus muscle above the umbilicus, over an area the size of a saucer. The case was presented to the Academy by Dr. Montgomery at the April meeting. At that time there was an elliptical area of skin necrosis, whose dimensions were three and a half by two and a half inches. It presented a dull mottle appearance. It was slightly moist, sluggish and parchment-like to the touch. Surrounding the ulcer there was a hyperemic zone, which faded gradually at its outer margin. The patient complained of intense itching, which at times was unbearable. At the junction of the necrotic and hyperemic areas there was marked [illegible] over the entire surface the pain was a consta [illegible] the courtesy of Dr. Montgomery the case came under the Doctor's care, May 9, 1901, and the following day entered the hospital. For two days strong antiseptic lotions were applied as a preliminary to operation.

On May 12, under chloroform anesthesia, the ulcer was circumscribed by a deep incision, extending through a thick layer of fat to the sheath of the right rectus. In dividing the layer of fat it offered so much resistance to the knife as to suggest an abnormal condition of that tissue. Accordingly the margin fat was also removed for a considerable distance from the periphery of the original incision, the overlying skin being left as a loose flap. This flap was then carefully sutured to the sheath of the rectus, and to secure a better lodgment for the grafts, the exposed sheath was removed up to the suture line. Upon the belly of the rectus, skin grafts, after the method of Thiersch, were adjusted and the wound was dressed with silver foil and dry aseptic gauze.

The patient made a quick, uninterrupted recovery, leaving the hospital. The recovery seems to have been permanent and he makes no complaint save of hypersensitiveness of a small area below the lower segment of the cicatrix. At this joint the skin is slightly reddened but there seems no tendency to necrosis, although the patient has been roughing it in the mountains for several weeks. The only feature of the case worthy of further comment is a keloidal ring encircling the grafted area following the line of cultures.

Dr. Dudley Tait said that there is a little point in the Thiersch graft that is of interest and that is the advisability of overlapping the grafts. He finds when the graft is not overlapped we get an area of granulation. If we overlap, a certain amount of skin disappears but there is a perfect line between the graft and the skin, and we do not get the cicatricial tissue that always accompanies the granulation tissue.

Dr. J. Henry Barbat said that with the *x*-ray there is no need to burn except where one treats with the *x*-ray and then you may get a burn. Even in that case there is no need to burn unless you want to. He has burnt a patient slightly on purpose to get the slight inflammatory action without severe burning, but there is no necessity now in taking a skiagraph and burning the skin.

Dr. D. W. Montgomery said that the patient came to him some time before Dr. Huntington saw it. He was then suffering excruciating pain. It was not only tender but spontaneously painful. Simple ointments such as balsam of Peru and red oxid of mercury ointment were tried with temporary benefit and then there would be a relapse. The best dressing was a 3 or 4 per cent. solution of lysol. This gave ease and comfort for some time and it looked as if the wound was going to heal, but then it became worse again. He showed it to the society and Dr. Huntington said he thought he had a plan for such a wound. The interesting part to me is that the Doctor went in under the skin and the skin was stitched to the aponeurosis of the muscle. All of the fat and a part of the aponeurosis were removed. It is very interesting to me to know that he went in, in a flaring direction, but I suppose that is the direction of the rays. The result is excellent.

Medication into the Epidural Space.

Dr. Dudley Tait read a short paper describing the anatomy and technic of puncture; he referred to the experimental work done by Cathelin, Laborde and himself. The epidural route was first described and proposed by Cathelin, an assistant of Guyon, shortly after surgeons had pointed out numerous dangers following the injection of cocain by the subarachnoid route. Sicard was the first to show its use in medical therapeutics. Up to the present time, this method has been used principally to check pain, as in sciatica, lumbago, herpes zoster, fulgurant pains, intercostal neuralgia, gastric and vesical crisis. In the domain of surgery epidural injections of cocain have not as yet given sufficient analgesia for operative work. Chipault alone has been able to perform several operations on the lower limbs by this method. The essayist tried it unsuccessfully in circumcision. Prolonged and pronounced relief has been obtained in inoperable cases of cancer of the rectum, in painful accouchements, cystitis, tuberculosis and dry arthritis. In four cases of incontinence of urine due to various causes, Albarran and Cathelin report almost complete cessation of the incontinence after two or three epidural injections of cocain. The quantity of cocain used by this route is from 3 to 4 centigrams in a solution of 1 to 200. Mauclaire recently made a series of epidural injections of iodoform emulsion in Potts' disease. His results have not yet been published. Huchard has used this route to administer various cardiac stimulants. Cathelin believes that this route may be used for the majority of soluble drugs; he strongly urges injections of cyanid or benzoate of mercury in malignant or cerebrospinal syphilis. Compared with the subarachnoid route the epidural method possesses many advantages from the medical point of view and up to the present time it has been spoken of favorably by the eminent physiologists who condemned in the strongest terms Corning's subarachnoid method.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

Treatment of Hyperchlorhydria.

Einhorn, as stated by *Phil. Med. Jour.*, recommends cold sponge baths in the morning for ten minutes before breakfast and light exercise during the day. The diet should be of that character which will most intensely excite the glands to action. Acids and spirits must be avoided and the food should be rich in albumin, and the starchy foods excluded. Three large and two small meals should be taken daily. Alkalies are indicated in the way of medication. From one-half to one dram of the sodium bicarbonate should be given three times a day about one hour after meals, with the addition of magnesia and rhubarb when there is constipation. When the nervous element is pronounced the following is recommended by Einhorn:

R.	Strontii bromidi	ʒiii	12
	Aq. menthæ pip. q. s. ad	℥ii	64

M. Sig.: One teaspoonful three times a day at meal time.

Palliative Treatment of Cancer of the Larynx.

A. Courtade, in *Laryngoscope*, gives this treatment in cancer of the larynx: The introduction of a suitable canula to produce easy respiration; check the hemorrhage by the use of perchlorid of iron or peroxid of hydrogen; diminish the quantity of secretion and the odor by instillation of mentholated oil, such as eucalyptus; prevent granulations by swabbing with pyoktannin.

Treatment of Chalazion.

The following combination has been used with success in the treatment of Meibomian cyst:

R.	Iodi puri	gr. iii	18
	Potassii iodidi	gr. vi	36
	Lanolini	ʒi	4
	Petrolati liquidi	℥iiss	80

M. Sig.: To be applied locally at night.

Treatment of Secondary Anemia.

Blackwood recommends the following combinations of iron and arsenic in the treatment of anemia:

R.	Euquininæ	ʒi	4
	Ferri lactatis	ʒii	8
	Liq. acidi arsenosi	ʒiss	6
	Tinct. lavend. comp.	℥ss	16
	Elix. aurantii	℥iv	128

M. Sig.: One teaspoonful four times a day in water.

Burns of the First Degree.

The following is recommended as a local application in burns before vesication has taken place:

R.	Acidi acetici dil	℥i	32
	Glycerini	℥i	32

Bismuthi subnit. q. s. to make paste.

M. Sig.: Apply to the affected parts.

Comparative Value of the Seed and Root of Colchicum.

It is well known that the value of the preparation of colchicum depends upon how it is prepared and from what prepared. Many preparations of this drug produce no results because of substitution of an inferior grade of the drug. The same may be said of strophanthus, gaultheria and digitalis.

These preparations, depending as they do upon their active principles for their efficiency in therapeutic use, should be selected with care and that part of plant made use of which contains the largest per cent. of the active ingredient.

Dr. L. Schulze, in *Western Druggist*, in speaking of the comparative value of the seed and root of colchicum, states that the seed contains on an average from .6 per cent. to .7 per cent. of the active principle. The root contains between .4 per cent. and .5 per cent. Consequently, he states, there should be no valid reason why the root should be retained in the pharmacopeia since the seed contains so much more of the active principle colchicine.

Sulphur in Dysentery.

Dr. G. A. Richmond, as noted in monthly *Cyc. of Med.*, recommends the following combination in the treatment of dysentery:

℞.	Sulphuris (sublimed)	gr. xx	1	33
	Pulv. opii et ipecacuanhæ	gr. v		33

M. Ft. chart. No. i. Sig.: One such powder to be taken every four hours until the diarrhea is checked.

Dr. Richmond states that in all his cases treated by the foregoing method, recovery has been rapid and the patients derived very speedy relief from pain and tenesmus. The blood and mucus were easily checked and relapses never occurred. As soon as the diarrhea becomes less it is desirable to give the powders less frequently.

Habitual Constipation.

℞.	Sulphuris loti	℥i	32	
	Potassii bitartratis	℥i	32	
	Pulv. sennæ	ʒiv	16	
	Syrupi rhei	ʒii	8	
	Ext. cascaræ sagradæ flu.	ʒii	8	

M. Ft. confectio. Sig.: One teaspoonful at night to move the bowels.

Vomiting of Acute Gastritis.

The following is recommended to suppress the vomiting in acute gastritis:

℞.	Vini ipecacuanhæ	ʒiv	16	
	Tinct. nucis vom.	ʒii	8	

M. Sig.: Take ten drops in water every two hours.

Treatment of Fissure of the Nipples.

Dombrovsky, in *Deutsche Aerzte-Zeitung*, recommends that the nipple be bathed several times a day with a 3 to 5 per cent. solution of potassium permanganate. He states that the first few applications are somewhat painful, but the pain soon disappears. Before the infant nurses the breast should be washed with warm water and the breast protected with some waterproof material having a perforation through which the nipple may project. He states that a cure will result in a week.

To Remove Dandruff.

The following combination is recommended to remove the dandruff from the hair:

℞.	Resorcin	ʒiss	6	
	Glycerini	℥i	32	
	Alcoholis	℥iss	48	
	Aq. rosæ	℥iii	96	
	Aq. destil. q. s. ad	℥viii	256	

M. Sig.: Apply locally and thoroughly rub into the scalp.

In Insomnia of Hysteria.

℞.	Pot. bromidi	ʒiv	16	
	Chloralis hydratis	ʒiii	12	
	Tinct. asafetidæ	ʒiv	16	
	Syr. simplicis	ʒvi	24	
	Aq. destil. q. s. ad	℥vi	192	

M. Sig.: One tablespoonful every three hours until sleep is produced.

Treatment of Acne in the Young.

The following is recommended by Brocq, as noted in *New York Med. Jour.*: The patient should eat of fat and butter sparingly and should abstain from the use of coffee, tea, pork, wine, pastry, cheese and spiced foods. The following preparation is advised to be taken at the beginning of each meal:

℞.	Sodii bicarb.	gr. ivss		27
	Magnesiæ (calcined)	gr. iii		18
	Pulv. cascaræ sagradæ	gr. iiss		15
	Benzonaphthol	gr. iiss		15

M. Ft. cachet No. i. Sig.: One such before each meal.

The face should be cleansed with pledgets of absorbent cotton and water as hot as can be borne, in which is boiled two teaspoonfuls of bran and a soupspoonful of sodium biborate to the quart.

At night the following ointment is to be applied to the spots:

℞.	Beta-naphthol (camphorated)	gr. ivss		27
	Resorcin	gr. iii		18
	Saponis nigri	gr. iii		18
	Cretæ preparatæ	gr. viiss		50
	Sulphuris precip.	gr. xxii	1	50
	Vaselini	gr. iii		18

M. Sig.: Apply locally at night.

In the morning the following should be applied after washing the face:

℞.	Sodii boratis	ʒiiss	10	
	Etheris sulph. camph.	ʒx	40	
	Aq. rosæ	℥iii	96	
	Aq. destil	℥ivss	144	

M. Sig.: Applied locally.

Mustard in Pneumonia.

In the *Post-Grad.*, Dr. L. Weber highly recommends the use of the mustard bath in the treatment of pneumonia, especially in children. He uses about one pound of mustard to one child's bath-tub of water. The child should remain in the bath ten minutes or until the skin becomes pinkish instead of blue. Friction must be carried on while the patient is in the bath. He should then be removed from the bath and wrapped in blankets. These should be repeated every second or third day.

Treatment of Hemorrhoids and Ulcer of Rectum.

Darche, in *Canad. Pract.*, has used with success the following applications in such cases:

℞.	Mercuralis	gr. v		30
	Chloretoni	gr. xv	1	
	Acidi boracici	ʒss	2	
	Petrolati	℥i	32	

M. Ft. unguentum. Sig.: To be applied three times daily.

In cases of ulcer of the rectum he used the following in the form of a suppository:

℞.	Mercurolis	gr. i		06
	Chloretoni	gr. ii		12
	Acidi boracici	gr. viii		5
	Olei theobromæ	gr. xxx	2	

M. Ft. suppos. No. i. Sig.: To be inserted at bedtime.

In cases of chronic gonorrhea he recommends the following in the form of a bougie:

℞.	Mercurol	1 per cent.
	Chloretoni	2 per cent.
	Acidi boracici	8 per cent.

M. Ft. bougies. Sig.: Insert night and morning.

Medicolegal.

Requiring Examination by Expert Oculist and Aurist.—The Supreme Court of the State of Washington holds, in the personal injury case of Myrberg vs. the Baltimore & Seattle Mining & Reduction Company, that the trial court has the power, within its discretion, to require a submission to an examination by an expert oculist and aurist where damages for alleged injuries to eyesight and hearing are claimed. But it does not think that an application to require a submission to such an examination was seasonably made, or that the trial court abused its discretion in not requiring it, when the application therefor was not made until in the midst of the trial when all the witnesses had been examined in chief on the one side, and several on the other, and it would involve a delay in the trial and loss of time for court and jury.

Attending Physician as Witness in Poisoning Case.—The Supreme Court of Oregon says, in the case of State vs. Simonis, that there is some conflict in the authorities as to whether a medical witness is qualified on a trial for poisoning to give an opinion that the symptoms indicate poisoning, when his knowledge was not obtained from personal experience or observation. But, whatever the rule may be in this particular, the books all agree that, before one can testify as an expert on that subject, it must first be shown that he is qualified to do so, either by actual experience, or such careful and deliberate study as enables him to form a definite opinion of his own in reference to the matter. Indeed, the definition of an expert, the court says, implies as much. It is one who has made the subject upon which he gives an opinion a matter of particular study, practice, or observation. He must have a particular and special knowledge upon the subject; and his competency, which is a question for the court, must be shown before he is permitted to testify. The mere fact of a witness being a regularly licensed and practicing physician the court does not consider sufficient of itself, as a matter of law, to qualify him to give an opinion as an expert as to the cause of the symptoms of his patients, as for example where poisoning is claimed. This conclusion it largely bases, in this case, on the fact of the act of 1889 regulating the practice of medicine providing that it did not apply to persons then practicing in the state, who, within a certain time, should register in the proper county office, while by the acts of 1891 and 1895 such persons were to be taken and considered as licensed physicians. It can not be assumed, it holds, that such a witness is entitled to testify as expert on the subject referred to. Furthermore, the court holds that a medical witness can not be asked to give his opinion, as a physician, as to what the general symptoms of a case indicated, the question not being so framed as to confine his opinion to facts previously testified to, but being intended to call for his opinion, based upon all the facts within his knowledge, whether stated or not. He must first detail the symptoms; then, if qualified, may be allowed to express an opinion based thereon.

Powers of Secretary of County Board of Health.—The Indiana statute makes the board of commissioners of each county a board of health ex-officio for the county. It then makes it the duty of the board to protect the public health by the removal of causes of disease, when known, and in all cases to take prompt action to arrest the spread of contagious diseases, to abate and remove nuisances dangerous to the public health, and perform such other duties as may from time to time be required by the State Board of Health, pertaining to the health of the people. Annually, the board is required to elect a secretary, who shall be its executive officer and shall serve as health officer for one year. Under this statute, the Appellate Court of Indiana says, in the case of Martin vs. the Board of Commissioners of Montgomery County, the county board of health has authority to protect the public health, and such expenses as are authorized by the board for the public benefit should be borne by the public. But this case presented the question of whether the secretary of the county board of health, irrespective of any action of the board of health, has authority to incur an indebtedness for which the county can be held liable. The court practically holds that he has not. It says that the statute makes the secretary the executive officer of the board, but it does not give him the powers the board itself has. If he has all the powers of the board itself, then the board is a useless body, and the only necessity for its existence is to elect a secretary each year. This was not the intention of the legislature. When the statute says that he shall be the executive officer of the board, it means that he shall carry out such orders and regulations as the board may make. If he has power, for example, to hire a pond of stagnant water drained and thereby abate a nuisance dangerous to the public health, he may do any act without authority from the board. There is no statute giving him authority to bind the county for such services. The statute creates a board of health, says who shall constitute the board, prescribes the duties of the board, and makes the secretary simply the executive officer of the board. If a nuisance is to be abated, that fact must be determined by the board of health, and not by the secretary. Whether, however, in a given case, an emergency might arise requiring immediate action by the secretary, the court says was not presented.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

American Medicine (Philadelphia), September 7.

1 Correction of Occipito Posterior Positions Through Seizure of the Anterior Ear by Two Fingers in the Vagina. Robert L. Dickinson.
2 *Disease and Sin. (Concluded.) George M. Gould.
3 *Resections and Exsections. Fernand Henrotin.
4 What Is True Conservatism in the Treatment of Appendicitis? Miles F. Porter.
5 *The Manifestations of Rheumatism in Children. William F. Cheney.
6 An Unusual Type of Smallpox, with Fatal Termination. Louis Leroy.
7 The Future of the Negro from the Standpoint of the Southern Physician. Seale Harris.

Boston Medical and Surgical Journal, September 5.

8 *Under What Circumstances (Excepting Emergencies) Is It Desirable to Operate Upon Gallstones for Radical Cure or for Relief? Maurice H. Richardson.
9 *Obstructive Diseases of the Lower Bowel. Henry O. Marcy.
10 *The Indications for Operation in Malignant Neoplasms of the Stomach. Charles G. Cumston.
11 Remarks on Tuberculosis and Its Treatment. Dr. Baradat.
12 *The Chemical Properties of Leucocytes. Edward T. Williams.

Medical Record (N. Y.), September 7.

13 *The Work of the Sanitary Department of Havana, with Special Reference to the Repression of Yellow Fever. W. C. Gorgas.
14 A Personal Experience in Radiography. Alexander B. Johnson.
15 *Can Nasal Catarrh and Catarrhal Deafness be Cured? Carolus M. Cobb.
16 The Need of Better Provision for the Proper Care of Cases of Delirium Tremens and Cases of Doubtful Mental Disease. Henry C. Baldwin.
17 *A New Continued Fever. Edgar J. Spratling.

Philadelphia Medical Record, September 7.

18 *On Streptothrical Infections. John H. Musser.
19 *Light and Radiance in the Treatment of Disease. George G. Hopkins.

Medical News (N. Y.), September 7.

20 *A Study of the Temperature Laws in Epilepsy Based on One Thousand Observations. William P. Spratling.
21 The Treatment of Puerperal Infection. David J. Loring.
22 Generalized Vaccinia. John H. Huddleston.
23 A Massage Roller for the Application of Heat and Cold, Combined with Electricity. Robert C. Kemp.
24 A Consideration of Hemorrhoids. John Turner, Jr.
25 Autotoxemia. William W. Pennell.

New York Medical Journal, September 7.

26 *Modern Methods in the Management of Typhoid Fever, in Nursing, Feeding, and Bathing, with Special Reference to the Private Patient. Russell Bellamy.
27 Imperative Conceptions. Hugh T. Patrick.
28 Study of the Temperature, Pulse, and Respiration in the Diagnosis and Prognosis of Certain Diseases of the Brain. (Continued.) J. T. Eskridge.
29 *Therapeutics of Whooping Cough. Thomas J. Mays.
30 An Unusual Case of Gastric Ulcer. Frank H. Murdoch.

St. Louis Medical Review, September 7.

31 Hernia and Its Treatment; Reducible, Incarcerated and Strangulated. Herman E. Pearse.

Cincinnati Lancet-Clinic, September 7.

32 The Doctor Harris Case. Brose S. Horne.
33 Trifacial Neuralgia—Treatment. B. Merrell Ricketts.

AMERICAN.

2.—See abstract in The Journal of July 13, p. 135.

3. **Resections and Exsections.**—Henrotin favors radical operations in diseases of the ovary and tubes. He says he has performed at least 250 operations and can safely say that 40 per cent. may be termed delayed or partial cures or failures. Of this 40 per cent. the heaviest proportion by far comes from such patients as have had salpingotomy or tubal resection performed. The next most complaining class includes those patients in whom ovaries alone were resected, and the best results were obtained in those in whom the tubes were entirely exsected, and the whole or portion of the ovaries removed. The argument in favor of tubal resection that it saves reproductive power is not to be considered very valid, and he says that

when such an operation is performed for every baby born there will be 40 uncured or only partially cured patients. He does not wish to be classed among the ultra-radical operators, however, and the question how much of an operation should be done at each time arises even in these cases.

5.—See abstract in The Journal, xxxvi, p. 1493.

8. Gall-Stones.—The treatment of a case of gall-stone is discussed by Richardson, who favors early operation. As a rule the operation is easy, safe, rapid and effectual and remote dangers are avoided and lessened. If the diagnosis turns out to be wrong other lesions may be discovered, perhaps even more serious. The difficulties of determination between lesions in this locality causing pain is very great and the more appreciated by the surgeon the greater his experience. Late operations for gall-stones are difficult and dangerous. The *objections to the operation* are, first, the danger which, though slight, is worth considering and should be emphasized, though he does not believe that it equals the dangers that attend the passage of a single stone from the gall-bladder to the duodenum. The diagnosis is frequently wrong, but he does not believe that this necessarily prohibits exploratory operation. For one case of needless or hopeless intervention there may be many permanent cures. Hernia may result though it is not liable to be serious in the upper abdomen. It is, nevertheless, a disadvantage. The possibility of recurrence is considered, but he has never seen or had reason to suspect it after cholecystotomy and drainage. This argument, therefore, seems to have little weight. As regards the possibilities of spontaneous cure he considers the chances so remote and the dangers so great that it may be safely neglected. We have on the one hand slow and painful ulceration lasting for years and on the other, safe, rapid, intelligent and scientific work of a few minutes with absolute demonstration of a permanent cure which is impossible in other cases. The possibility that after offending enough to prove the diagnosis, gall-stones may give no further trouble should be little considered, unless where there are distinct contra-indications to operation; the other possibility that the last decisive attack of biliary colic may have been caused by the last remaining gall-stone is not of sufficient force to prevent exploratory operation. If one gall-stone begins to give trouble there is no telling where the process will end, except that the chances are that it will end in permanent disability or death, if let alone.

9. Obstruction of the Lower Bowel.—The various conditions in cases of obstruction are noted by Marcy with the therapeutic indications in each. The most important are those due to malignant growths, which unfortunately, however, come to the surgeon as a rule too late to hope for cure by complete removal. When the case has so advanced as to come within the strict limitation of his subject, that is, obstructive disease of the lower bowel, little can be hoped except palliation by colostomy. In his surgical experience he finds he has steadily enlarged the class of cases considered operable; he is governed much more by the evidences that the disease is absolutely local than by its precise location. Any circumscribed growth limited to the portion of the bowel within reach of the finger in either sex is operable. If there is distinct evidence of glandular infiltration it is doubtful whether operation is advisable, and here relief is experienced and life prolonged by colostomy. He speaks well of the Kraske operation in some of these cases as giving an enlarged field of operation and affording the possibility of removal of many of the pelvic glands. Abdominal section in the Trendelenburg position is also noticed; resection of the lower bowel for cancer by approaching it from above in many instances is a very great advantage in modern technique for a variety of reasons. The lymphatic glands of the pelvis can be examined and removed as by no other route. Resection may be made much more accurately, and in many instances the function of the lower bowel preserved and restored.

10. Malignant Disease of the Stomach.—Cumston sums up that the surgical treatment of carcinoma of the stomach is indicated not only when the stenosis is present, but *also* as a radical cure of cancerous disease. If it has radically cured a few patients only, it has at least given, in more than 33 per cent. of those operated on, a new lease of life of from one to eight years, while the mortality has been reduced to 20, 15 and even 10 per cent. In every case of suspected carcinoma an immediate exploratory laparotomy should be advised and every new growth that can be removed should be taken out no matter what its nature may be. A confirmed diagnosis of cancer of the stomach should not be waited for as exploratory laparotomy is justified in every case where the patient is affected with gastric troubles when: 1. An analysis of the gastric juice shows absence of pepsin, or the presence of lactic acid. 2. When medical treatment carefully conducted does not increase the body weight and keep it there. The indications are those drawn from the general condition of the patient and the presence of visceral metastases demonstrated by palpation or exploratory incision as well as from the immobility and adhesions of the tumor and the propagation of the neoplasms beyond the movable portions of the duodenum or esophagus. The age of the patient, presence of some enlarged glands, size, position and extent of the new growth in no way contraindicate operation.

12. Leucocytes.—Williams suggests a change of name for Ewing's classification of leucocytes, using the terms acid, neutral and alkaline instead of basophile, neutrophile and oxyphile. In all three classes the nuclei, like the bodies of the normal single-nucleated leucocytes, take the alkaline dyes. The normal, many-nucleated leucocytes are neutral to dyes as are also the neutral myelocytes, which are found only in disease. The bodies of the so-called eosinophile leucocytes and myelocytes take only the acid dyes. They are, therefore, alkaline. The alkaline leucocytes, he thinks, occur chiefly in disease and any marked increase in their number is sure to be a pathologic symptom. He suggests that the presence or absence of nuclei is a condition on which the taking up of acid dyes depends and that the alkaline leucocytes are the dyeing forms. He therefore includes all alkaline leucocytes under the designation of necrotic cells. This opinion is supported not only by their presence in disease, but by their association with xanthine and spermin, which are the products of decomposition of nuclein.

13. Yellow Fever in Havana.—The methods of sanitation adopted in Havana are described by Gorgas. Since the demonstration of the mosquito origin of the disease, a complete change has been made in the system of quarantine. A certain number of rooms selected by the physician and patient's family are quarantined, completely isolated by nets made mosquito proof, and *all mosquitoes in adjoining rooms* and even in adjoining houses are destroyed as far as possible, and the insecticide methods adopted. The results are very striking. The disease seems to have been almost absent during the present year, at a time when it should be most prevalent. The city is divided into eight districts for the purpose of destroying mosquitoes by the use of oil, mosquito-proof receptacles for water, etc. He says in conclusion, there being a very large non-immune population in the city, and yellow fever having been introduced into the city on a dozen different occasions, they have so far managed to keep it out later than has ever been done before. Even if it should occur later in the season, he feels confident the destruction of mosquitoes is the proper method for fighting the disease and that we shall be eventually successful on these lines.

15. Nasal Catarrh.—The importance of finding the source of infection in cases of nasal catarrh is emphasized by Cobb, who reports several cases demonstrating his points. Each case, he thinks, must be carefully studied, and it may be a question of weeks and even months before we can be certain of the cause, but if we bear in mind that chronic discharge in the throat is caused in the same way as chronic discharge in other parts of the body, and study the cases in this light, we should be able to treat it intelligently. His experience has led him to believe that the disease is curable. Some of the cases were cured by the treatment of antral disease, others by removal of portions of the turbinate and in one case the diseased root of a tooth was the cause of the condition.

17. **New Continued Fever.**—In the spring and early summer of this year Spratling has observed what is to him a new fever in his part of Georgia. It begins with malaise, muscular pain, especially in the neck, slight chilly sensations, temperature rising at once to 102 F. sometimes, pulse from 112 to 120, respiration to 30 or 40; nausea was present, a hacking cough and mental depression; later the pains were more pronounced, and headache severe, with photophobia and dizziness on rising; the temperature was 104 to 106 F., pulse 120 to 140, respiration 40 to 60; the abdomen was sore and tympanitis, there was anorexia, and scanty, offensive and highly-colored urine. The mind was periodically clouded, often actively delirious, according to the temperature, which changed rapidly, sometimes four or five fluctuations in twenty-four hours; the slightest noise, disturbance, or exertion, mental or physical, causing rapid exacerbations. The cases differ from dengue in the very widely varying symptoms. In several cases the temperature reached 106.5 F., and the influence of environment was very marked, which also differed from dengue. There was also no involvement of whole families; the cases were isolated. The symptoms lasted from two to five days, then gave way rapidly, but the fever and scant urine persisted for several days longer, and there were frequently profuse sweats. We have here, he thinks, a close relative, if not actually the same thing as Malta or Mediterranean fever. In about one-half of the 60 cases the disease was mild. The longest course was twenty-three days. The prognosis was good when no organic heart lesion existed. The kidneys were stimulated with alkaline diuretics and depressant medication avoided; strength preserved and quiet maintained. Tests for malaria and typhoid fever failed to give any reactions; and these diseases are rare in that locality.

18.—This article has appeared elsewhere. See THE JOURNAL of August 31, ¶68, p. 603.

19. **Light Treatment.**—Hopkins describes his methods of using light and the *x*-ray. In cancerous growths he prefers soft tubes and has found the static machine worked by an electric motor preferable to the alternating current. For the protection of the parts not to be treated he uses several layers of lead foil, glued to pasteboard or more flexible material, making an opening where the rays are desired to act. The theory on which he advocates the use of the soft *x*-ray tube in the treatment of carcinoma is that the power to produce changes in the tissues must be proportionate to the resistance which the cells of the tissue to be acted on offers to any destroying agent. Theoretically, the longer wave of the soft tube, as compared with the harder tube, has more destroying and disintegrating effect. He reports a case which he thinks was cured by this method. The first effect in all the cases is decrease in the density of the tumor. This change in consistency governs very largely the time of exposure. If the time is too long necrosis would occur, which should be avoided.

20. **Epilepsy.**—The temperature in epilepsy has been carefully studied by Spratling, who notices Bourneville's conclusion that isolated attacks augment the central temperature. His own observations agree in part only with Bourneville, who does not classify the types of seizures studied or make due allowance for certain physiologic conditions. After making due allowance for diurnal variation, he finds that 40 per cent. would be the lowest of such cases showing increased temperature after seizures, and 70 per cent. the highest, making the general grand average of cases showing increased temperature after seizures 55 per cent. The part played by muscular activity in creating heat is noted and its action in these cases wholly irrespective of any influence exerted on the cerebral heat centers. In many petit mal and psychic attacks in which muscular activity plays a small part and in which the temperature is increased after seizures, such increase is due to disturbance either of the cortical heat center or centers, or of centers that observers believe have been located in the corpus striatum and optic thalamus. He finds that subnormal temperatures follow epileptic seizures after grand mal more than after petit mal or psychic seizures, the proportion being 15 per cent. of the former to 10 per cent. of the latter types; and while he agrees in the main with Lemoine in considering such cases as anomalous in having abnormally low temperature in health, he does not consider this explanation quite sufficient. There will usually be found in these cases some chronic disease or general asthenic condition of long standing that lowers the stamina and vitality of the individual. All that has been said by Bourneville, Lemoine and others in reference to the high temperature in status epilepticus is confirmed by his observations. The temperature in serial attacks runs uniformly higher than in isolated attacks, but not so high as in status, serial attacks occupying a middle ground, between the two. As a possible factor in establishing the presence of toxins or other agencies in the body prior to and possibly causing the convulsion, an effort was made to take the temperature in some cases when the aura was of sufficient length, before the attack, but was successful in only one case where the heat began two hours before the fit, when it ran steadily up to 102 F. and the patient passed into convulsion.

26. **Typhoid.**—The details of hospital treatment are given at length by Bellamy with special reference to the nursing, dieting, bathing methods, etc. He has not had much success with the ice tub, but believes that systematic tubbing on modern lines is the most advantageous. The methods used in the Johns Hopkins Hospital are described and illustrated by plates, as is also the author's bathing apparatus. As regards other methods he mentions the use of saline baths, which he thinks are of practical advantage in many cases, also olive oil inunctions following these to relieve the irritation caused by the salt. He believes in the use of turpentine if tympanites exists and sweet spirits of niter and digitalis in small doses, strychnin sulphate, etc. When convalescence occurs he insists on the necessity of care as regards diet, etc.; as much care and consideration should be given the patient as during the stage of pyrexia.

29. **Whooping Cough.**—The treatment suggested here by Mays is the use of counter-irritants over the pneumogastric nerves, which he says is the only method that has ever given him good results. The practical way of applying the remedy is as follows: Trace the pulsating carotid artery from behind the angle of the lower jaw to the clavicle on both sides of the neck. This will be a landmark for finding the pneumogastric nerves which lie in close proximity and slightly behind the carotids. Gentle massage and kneading of this region of the neck, every hour or two, yield beneficial effects in many cases of this disease. The application of a strip of mustard plaster, about two inches wide, from the angle of the lower jaw to the clavicles on each side of the neck, two or three times a day, until the full effects of the mustard are evident, is almost sure to cause amelioration of the spasmodic cough. Equal parts of gum camphor, chloral hydrate, and menthol, applied over this region, are also very useful. Painting the same area with tincture of iodin, twice a day, until irritation of the skin is produced, is a beneficial procedure. Finally, in very stubborn cases the hypodermic injection of silver nitrate over the vagi must be resorted to in accordance with the following plan: Lift the skin over the vagus between the thumb and the forefinger of the left hand, introduce the hypodermic needle just under the elevated skin, and inject five minims of a two-and-a-half-per-cent. solution of cocain hydrochlorid. Detach the syringe from the needle and allow the latter to remain in the puncture. Wash out the syringe with water, draw a two-and-a-half-per-cent. solution of silver nitrate into the syringe, attach the latter to the needle, and throw in from three to six minims of the silver solution. Under this treatment he says the child becomes more comfortable, the paroxysms less frequent and the severity of the cough decreases. The affection assumes a different character even in a day or two.

FOREIGN.

Revue Hebd. de Laryngologie (Bordeaux), July 27.

Acute Inflammatory Edema and Abscess of the Larynx. LUBET-BARBON.—The principal indication is to gain time. The edema will become stationary in forty-eight to sixty hours and subside after three to four days. Antiphlogistic measures internally and externally, possibly leeches, hot fumigations, wet packs around the neck, a 1 to 1000 carbolized spray and insufflations of morphin are some of the measures recommended. If the abscess points, incise immediately. In 3 cases observed by the writer this intervention revealed pus and relieved the patients. Intubation or tracheotomy is the last resort. Nineteen cases are reported, including several of personal observation. Only one patient was a child. The edema may be due to irritation from a foreign body, to a chill or other cause favoring infection, which is produced by various germs. The dyspnea may be the first symptom and appear suddenly. Inspiration is difficult and whistling. Expiration is protracted and croupy. The patient is unable to cough or expectorate as the dyspnea is increased by the slightest effort of the kind. He can not sleep for fear of suffocation, and the waking coma is due not only to the fatigue from sleeplessness but to the slow anoxhemia, the consequence of the dyspnea. Dysphagia is so pronounced that the patient feels as if a sharp instrument were in his throat at every effort to swallow. There may be fever and chills. Two cases are on record in which the removal of the obstacle by tracheotomy failed to prevent the fatal termination.

August 10.

Aberrant Mastoid Cellulitis. J. Toubert.—Osteitis from an otitis of the middle ear developing at a distance, beyond the antrum, is a rare affection. The aberrant abnormal cell in which it occurs is always retro-antral or mastoido-occipital. This cellulitis in Moure's case proved fatal. In Richard's it caused hemicrania, nausea and vomiting. The lymphatic or venous route was evidently the source of contagion, as there was no direct connection between the middle ear and the aberrant cells in the four cases on record. Recovery was remarkably rapid after evacuation. The abundance and the persistence of the suppuration indicate its origin in the bone.

Revue Mensuelle des Maladies l'Enfance (Paris), August.

Treatment of Old Forward Luxation of the Radius. Broca.—The technique advocated is the resection of the head of the radius if it will not stay under the condyle after reposition on account of the rupture of the ligament in front. After the head is removed, the stumps of the ligament can be brought across the small neck and sutured, thus holding the radius in its normal position. The functional results in a case described were perfectly satisfactory. The patient was a lad of 7 and the luxation had occurred eight months previously.

Heart Disease in Children. Marfan.—Mitral insufficiency from endocarditis, without other lesions, in children is sometimes curable. When it persists, it causes little if any functional disturbance while childhood lasts. If asystolia, *that is*, symptoms of insufficient contraction of the left ventricle occur, some other lesion must be present, probably congenital. An idiopathic endocarditis sometimes develops in children. It is more severe before 4 or 5 than after this age, and most frequently affects children with some congenital lesion. Acquired lesions of the aorta are very rare in children. Marfan has observed 3 cases and been able to find only 24 in the literature. They are of a rheumatismal or atheromatous type. The former includes pure aortic insufficiency, with the same manifestations as in the adult, although the functional disorders are less pronounced. This tolerance diminishes with age. Aortic insufficiency associated with aortitis, is a second variety. True stenosis of the orifice of the aorta is exceptional in children unless congenital. This variety, with its double souffle at the base, is more serious than the first. The lesions are diffuse instead of circumscribed. There may not be angina pectoris, but pain occurs frequently in the sternum, without distress or irradiation. The attacks of suffocation sometimes suggest asthma, sometimes dyspnea with pallor and vomiting, but they last only a few seconds. In the third variety, the lesions are associated with some alteration of the mitral orifice, and in the fourth and last, with pericardial adhesion. The latter causes, in children, recurring asystolia with brief intermissions. Only a few instances of atheromatous lesions in children are on record. They usually appear under the form of a chronic aortitis with a systolic souffle at the base, usually erroneously attributed to stenosis. If isolated, it causes little trouble. In one case, neuralgia of the phrenic nerve was the only symptom, but it may lead to an actual aneurysm or induce fatal asystolia. This insufficient contraction of the left ventricle, in children, is usually due to pericardial adhesion, but occasionally to an acquired endocarditis complicating a congenital cardiac lesion. After 6 years of age it is almost invariably due to pericardial adhesion. In children, the heart rhythm is usually preserved. Tricuspid insufficiency is very rare, as is also apoplexy of the lungs, while the hepatic phenomena predominate. The liver remains comparatively enlarged even during the intermissions. In rheumatismal pericardial adhesion, the heart is hypertrophied, while in the tubercular variety it is of normal size or even smaller than normal. Edema, cyanosis and the cardiac liver are common to both. The cardiac liver in these cases tends to cirrhosis, and the exaggeration of the symptoms may simulate a tubercular peritonitis or alcoholic cirrhosis, and perihepatitis may obscure the picture still more. Digitalis must be given at the slightest suspicion of insufficient contraction of the left ventricle. Marfan prefers a maceration of 20 to 40 cg. of the pulverized leaves in 60 to 100 gm. of cold water, strained after twenty-four hours and administered at one dose in the morning before breakfast, for five or six days to a child of 5 or 6. He then substitutes .75 gm. of theobromin for a child under 6 and 1 gm. after this age. This stimulates the renal function. Digitalis again after ten days if necessary. Caffein may advantageously supplement these measures, one subcutaneous injection of 10 to 20 cg. of caffein for two or three days. A purgative should not be given before the digitalis, as it may start a diarrhea hard to control. Sometimes the diuresis is not established until ascites has been relieved by puncture. Absolute rest in bed is essential, and a milk diet, with possibly revulsion over the heart with methyl chlorid, etc. By these measures an impending attack of asystolia may sometimes be averted. To forestall the tendency of the cardiac liver to cirrhosis, Marfan gives calomel every fifteen to twenty days, 5 cg. in five doses at half-hour intervals in the morning.

Archiv f. Kinderheilkunde (Stuttgart), xxxii, 1 and 2.

Radioscopy of the Chest in Children. G. Variot.—Radioscopy of the chest in pneumonia in the adult is difficult, but children can be wrapped up warmly and carried to the apparatus in another room without discomfort or danger. The results of radioscopy in genuine croupous pneumonia confirm those obtained by percussion and auscultation and frequently afford information when the latter fail. It is possible thus to differentiate pneumonia from meningitis, especially when the solidification is taking place and the slightest difference in the transparency of the lung is plainly perceptible. It reveals centrally located pneumonic foci which have hitherto baffled all diagnostic measures. It is more difficult of interpretation in case of bilateral bronchopneumonia on account of the lack of the sound lung for comparison. There is merely a slight decrease in the transparency of the parenchyma, most pronounced with confluent foci, especially the pseudo-lobar forms. The edge of the heart shadow is vague as it blends with the opacity of the parenchyma.

Atresia of Larynx After Intubation. G. v. Ritter.—A child of 16 months exhibited suddenly symptoms of laryngeal stenosis, requiring intubation, suffocating as soon as the tube was removed. Tracheotomy was therefore done after a few days; four days later the larynx was found to be completely occluded just above. The child died from intercurrent measles and autopsy confirmed the complete obstruction of the larynx just above the tracheal wound, corroborating *O'Dwyer's* assertions in regard to the possibility of this occurrence after tracheotomy during inflammation. Since then Ritter has made a practice of continuing the intubation indefinitely if necessary, gradually substituting smaller and shorter tubes until in his five cases he found that the children—all between 15 months and 3 years—were cured without the necessity of further intervention. The intubation was continued for twelve to thirty-two days. The tube was coughed out sixteen times in one case.

Iron in Mother's Milk. J. K. Friedjung.—One of the disadvantages of the artificial feeding of infants is probably the lack of the iron which is always found in the normal milk of healthy women—in a proportion of 3.52 to 7.21 mg. to the liter in twenty-one cases investigated. The women were 19 and 27 years old, the infants 10 days to nearly 10 months. When nurslings do not thrive on apparently normal milk, the proportion of iron is usually found to be subnormal.

Ambulant Lewaschoff Treatment of Purulent Pleuritis. A. A. Kissel.—An apparently hopeless case of purulent pleurisy in a boy of 2, with high fever, great emaciation and a tubercular affection of the knee, was completely cured by the Lewaschoff method of the systematic substitution of warm saline solution for the pleuritic effusion. About 35 c.c. were removed in four applications of the aspirator, each followed immediately by the injection of the same amount of the salt solution. The fluid, which was a thin pus at first, was only slightly turbid at the last application. The procedure was repeated twice later, at intervals of about two weeks.

Beitraege z. Klin. Chirurgie (Tubingen), xxx, 2.

Intermittent Hydrops of the Knee. A. Linberger.—All of the 68 cases of intermittent hydrops of joints which Linberger has succeeded in collecting were in the knee, or knees, except one. Rheumatic antecedents were noted in 25, trauma in 8, gonorrhea in 4, the puerperium and tuberculosis in 2. Only 18 have completely recovered. The best results have been attained with arsenic—3 cures and 2 improvements out of 14; quinin—with 2 cures and 2 improved out of 18, and operation, which resulted in 4 cures of 7, and 3 improved although with recurrence later. Immobilization, ergotin injections in the vicinity, electricity, potassium iodid, a "dry diet" and change of occupation cured one patient each. No constant relation could be discovered between the recurrence of the effusion and menstruation. It is probably the result of inflammation, and consequently requires the same treatment, sparing the knee as much as possible. In the two personal cases observed, the hydrops recurred regularly every thirteenth day, with pain and inability to use the joint, conditions returning to normal in three days. One patient was a young man with a history of gouty attacks. The recurrence of the hydrops was postponed for six months at one time after puncture and disinfection. No benefit was derived from quinin, thyroid medication or Bier's stagnation hyperemia. [An English physician has recently called attention to a painless effusion in the right knee, liable to occur during the menopause or at puberty. It does not require local treatment, he says, as it subsides spontaneously.—Ed.]

Centralblatt f. Innere Med. (Leipsic), July 1.

Case of Three Lungs. G. Hernheimer.—At the autopsy of a three-weeks infant bifurcation of the trachea was noted, and a third lung was discovered communicating with it by a separate bronchus. All the three lungs showed the lesions of the fatal catarrhal pneumonia. Three other observations have been published of rudimentary lungs, but this is the first with actual functional connection with the trachea.

July 15.

Experimental Tuberculosis of the Suprarenals. B. de Vecchi.—Clinical conditions were imitated as closely as possible in the experimental research reported. Cultures of the tubercle bacillus were injected through the back into one suprarenal. All the animals exhibited the picture of severe intoxication, but no tubercular processes were found in the organs, merely the alterations in the cells of the nerves, liver, spleen and heart, and destruction of the blood with consequent deposits of pigment in the blood-forming organs, characteristic of severe intoxication. The most severe morbid changes were found in the central nervous system, indicating an elective action of the toxins on the gray matter of the cord. The entire cerebrospinal axis was affected, but the changes were most intense in the dorsal portion of the cord. The findings corroborate the assumption that Addison's disease is the sum of two factors: Insufficiency of the suprarenals and intoxication from the products resulting from the tubercular process developing in or outside of these organs. They also explain why caseous processes induce the classic picture of Addison's disease, while a tumor in the organ causes merely the indications of insufficiency.

Dermatologische Zeitschrift (Berlin), August.

Mechanism of Neurotic Alopecia. A. Bayet.—A young laboring man of a decided neuropathic tendency received a blow in the face. Three weeks later the hair fell out en masse over a large part of the head. Examination of the hairs showed that for 6 mm. from the proximal end each hair was degenerated, much diminished in diameter and with no traces of pigment. The hairs that did not fall out but continued to grow, showed the same shrinking and absence of pigment for a corresponding distance of 6 mm., while the hair was normal above and below the lanugo portion. The trauma must evidently have affected the nourishment of the papillæ for a time corresponding to the growth of 6 mm. of hair, after which conditions returned completely to normal.

Fortschritte a. d. Geb. d. Roentgenstrahlen (Hamburg), iv, 4.

Therapeutic Application of X-Rays. Sjögren.—Seventy-eight patients with various cutaneous affections have been treated at the writer's establishment in Stockholm. In 18 out of 27 cases of lupus the results were excellent. In 6 other cases the lupus had been treated in vain by other methods and was promptly and apparently permanently cured by radiotherapy. A complete cure followed its application in the 5 cases of scrofuloderma and 10 of chronic eczema, and also in 4 of intolerable pruritus of anus or vulva. All ulcerations were favorably influenced, fresh granulations rapidly developing while rodent ulcers shrank and finally disappeared. Hypertrichosis may require several repeated applications unless used with exceptional vigor from the start. Psoriasis did not seem to be affected by radiotherapy.

Jahrbuch f. Kinderheilkunde (Berlin), August.

Family Amaurotic Idiocy. Falkenheim.—A number of new cases have been published of Sachs' infantile family amaurotic idiocy with more or less paralysis, since his communications, raising the total to 64, of which 38 are known to have terminated fatally while the fate of 23 is unknown; 47 were seen by physicians and 17 diagnosed from others' descriptions. One of the first reported patients is still alive, 8 years old, but the affection is usually fatal before 3. Falkenheim has found 37 cases in 13 families, and notes that 4 of these families were interrelated. There did not seem to be any syphilitic, alcoholic or nervous antecedents in the family history, nor consanguinity, but the parents were Jews in the majority of cases. The development of the affection was not prevented by artificial feeding of the infants nor a wet nurse. No prophylactic measures have been discovered and no treatment has been of any benefit. The only consolation the physician is able to offer the parents is that they may have other children who will be free from the affection, as healthy children have been born before or after those thus afflicted in nearly every case. Falkenheim reports 4 new cases. The largest number—30—were observed in America, with 11 in England, 14 in Germany—generally Polish Jews—and 23 elsewhere on the continent. The symmetrical, congenital grayish-white opacity around the fovea, the weakness or paralysis of all the extremities, and the marasmus are the most striking features of this affection.

Wiener Klin. Wochenschrift, August 22.

Heart Failure from Insignificant Superficial Ulceration. Zuppinger.—In the three cases described, a small apparently insignificant ulceration was followed by death in a few days, with symptoms of insufficiency of heart action. The patients were healthy children between 1 and 3 years of age. The autopsy of two showed pronounced myocarditis and acute nephritis, evidently due to some severe intoxication, and from the absence of all other foci, the infection must have been exclusively localized in the superficial ulceration, a phlegmon on the foot in one case, an ulceration in the inguinal region in another and bilateral abscesses in the glands of the neck in the third. There were no symptoms of sepsis, merely those of cardiac insufficiency, rapidly fatal. The parents were healthy and had other healthy children in the two cases in which an autopsy was possible.

Gaceta Medica de Mexico, August 1.

Epilepsy in Mexico. S. Sosa.—This report was prepared at the request of Dr. Letchworth, president of the Association for the Study of Epilepsy. It states that there are 118 epileptic women and 48 epileptic men in the special wards set apart for them in the insane asylums of the City of Mexico. The treatment is usually bromids alternating with belladonna, a week at a time, with hydrotherapy. Various other methods of treatment have been tried with little result. Three Mexican plants, traditionally beneficial in epilepsy, were given partial trials. One, the *senecio canicida*, is an active poison for dogs, affecting the nervous centers and inducing a syndrome similar to that of epileptic grand mal. Toussaint discovered that this action was restricted to the protuberance and medulla oblongata. Various clinical experiments with it demonstrated that 10 to 20 cg. a day of the pulverized leaves diminished the number of seizures. Sosa administered it to ten women, but he noticed that cerebral congestion was easily produced while they were taking it. and he then abandoned its use. *Ipomca stans* is another plant which has for generations been credited with the power of curing epilepsy. It has never yet been really scientifically tested. The *indigofcra anil* was tentatively tried on account of its reputation for curing epilepsy, and Sosa states that its administration has a certain effect in diminishing the epileptic grand mal seizures, although it has never been tried on an effective scale.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Aug. 29 to Sept. 4, 1901, *inclusive:*

R. E. Austin, contract surgeon, leave of absence from the Department of Cuba, extended.

Alfred E. Bradley, captain and asst.-surgeon, U. S. A., ordered before a board in Washington, D. C., for examination for promotion.

Thomas S. Bratton, captain and asst.-surgeon, U. S. A., leave of absence extended.

Frederick A. Dale, lieutenant and asst.-surgeon, U. S. A., leave of absence granted.

Basil H. Dutcher, lieutenant and asst.-surgeon, U. S. A., ordered before a board in Washington, D. C., for examination for promotion.

Harry A. Eberle, contract surgeon, now at Canton, Ohio, is relieved from further duty at Aibonito, P. R., and on the expiration of his present leave of absence will report for duty at Fort Totten, N. Y.

Henry S. Greenleaf, lieutenant and asst.-surgeon, U. S. A., from Alcatraz Island, Cal., to duty at the Presidio of San Francisco, Cal.

Herbert W. Hatch, contract surgeon, former orders relieving him from duty in the Department of Alaska and directing him to proceed to San Francisco, Cal., en route for duty in the Division of the Philippines, revoked.

Franklin M. Kemp, lieutenant and asst.-surgeon, U. S. A., ordered before a board in Washington, D. C., for examination for promotion.

William P. Kendall, major and surgeon, U. S. A., to represent the Medical Department of the Army at the annual meeting of the American Public Health Association, to be held at Buffalo, N. Y., Sept. 16 to 20, 1901.

Edward L. Munson, captain and asst.-surgeon, U. S. A., to represent the Medical Department of the Army at the annual meeting of the American Public Health Association, to be held at Buffalo, N. Y., Sept. 16 to 20, 1901.

Harry O. Perley, major and surgeon, U. S. A., now at San Francisco, Cal., will proceed to Plattsburg Barracks, N. Y., for duty at that post.

Frederick P. Reynolds, captain and asst.-surgeon, U. S. A., leave of absence granted.

Herbert G. Shaw, lieutenant and asst.-surgeon, U. S. A., from the Presidio of San Francisco, Cal., to Alcatraz Island for post duty.

Richard P. Strong, lieutenant and asst.-surgeon, U. S. A., leave of absence extended.

Benjamin L. Ten Eyck, captain and asst.-surgeon, U. S. A., ordered before a board in Washington, D. C., for examination for promotion.

Philip G. Wales, captain and asst.-surgeon, U. S. A., ordered before a board in Washington, D. C., for examination for promotion.

Roy A. Wilson, contract surgeon, from Fort Totten, N. Y., to San Francisco, Cal., en route for assignment in the Division of the Philippines.

Navy Changes.

Changes in the Medical Corps of the Navy, week ended Sept. 7 1901:

Asst.-Surgeon E. Thompson, detached from the *Solace* and ordered home and to wait orders.

Medical Director E. S. Bogert, retired, detached from the Bosto Navy Yard, September 5, and ordered home.

Surgeon I. W. Kite, detached from the *Monterey*, upon reportin *of relief, and ordered* home and to wait orders.

Surgeon V. C. B. Means, detached from the marine recruitin rendezvous, September 25, and ordered to the *Monterey* as relie of Surgeon I. W. Kite, sailing from San Francisco, Cal., by Arm transport about October 1.

Surgeon G. T. Smith, ordered to the *Amphitrite* as relief o Surgeon J. M. Edgar.

Surgeon J. M. Edgar, detached from the *Amphitrite*, upon reporting of relief, and ordered home and to wait orders.

Asst.-Surgeon E. O. Huntington, ordered to the Naval Hospital New York.

Asst.-Surgeon J. F. Murphy, detached from the Naval Academy *upon reporting of relief*, and ordered to the *Indiana*.

Asst.-Surgeon W. M. Garton, detached from the *Indiana* an ordered to the Naval Academy as relief of Asst.-Surgeon J. F Murphy.

Medical Director G. F. Winslow, ordered to the naval recruitin rendezvous, Boston, Mass., October 1.

Surgeon C. J. Decker, ordered to the marine recruiting rendezvous, San Francisco, Cal., September 25, as relief of surgeon V. C B. Means.

Asst.-Surgeon P. E. McDonald, detached from the Naval Museu of Hygiene, Washington, D. C., September 9, and ordered to th *Constellation* as relief of Asst.-Surgeon C. A. Crawford.

Asst.-Surgeon C. A. Crawford, detached from the *Constellation* upon reporting of relief, and ordered to the Naval Hospital, Chelsea, Mass., as relief of Asst.-Surgeon R. R. Richardson.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissione and non-commissioned officers of the U. S. Marine-Hospital Servic for the seven days ended Sept. 5, 1901:

P. A. Surgeon J. O. Cobb, granted ten days' extension of leav of absence.

P. A. Surgeon Rupert Blue, granted leave of absence for te *days from* Sept. 2, 1901.

P. A. Surgeon J. H. Oakley, granted leave of absence for tw months from Sept. 17, 1901.

Asst.-Surgeon H. C. Russell, to proceed to Cleveland, Ohio, an assume temporary command of service during absence of Surgeo W. J. Pettus.

Asst.-Surgeon H. B. Parker, *to proceed to Amite City and Abit* Springs, La., for special temporary duty.

Asst.-Surgeon M. K. Gwyn, granted leave of absence for one day

Asst.-Surgeon B. S. Warren, granted leave of absence for fourteen days from Sept. 14, 1901.

A. A. Surgeon P. N. Barnesby, granted leave of absence for on month from Sept. 1, 1901.

A. A. Surgeon R. E. Ebersole, granted leave of absence for seven days from Sept. 3, 1901. Paragraph 181, Regulations, M.-H. S.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended Sept. 7, 1901:

SMALLPOX—UNITED STATES.

California: Los Angeles, Aug. 17-24, 1 case; San Francisco, Aug. 18-24, 2 cases.
Kansas: Wichita, Aug. 24-31, 1 case.
Louisiana: New Orleans, Aug. 24-31, 1 case.
Massachusetts: Boston, Aug. 24-31, 6 cases.
Minnesota: Minneapolis, Aug. 17-24, 5 cases.
Nebraska: Omaha, Aug. 24-31, 2 cases; South Omaha, Aug. 23-30, 2 cases.
New Jersey: Newark, Aug. 24-31, 5 cases, 2 deaths.
New York: New York, Aug. 17-31, 37 cases, 12 deaths.
Pennsylvania: Philadelphia, Aug. 24-31, 31 cases, 2 deaths.
Utah: Salt Lake City, Aug. 19-24, 2 cases.
West Virginia: Wheeling, Aug. 18-31, 1 case.

SMALLPOX—FOREIGN.

Austria: Prague, Aug. 10-17, 1 case.
Brazil: Rio de Janeiro, July 28-Aug. 4, 42 deaths.
Colombia: Panama, Aug. 19-26, 10 cases.
France: Paris, Aug. 3-17, 19 deaths.
Great Britain: Dundee, Aug. 10-24, 4 cases; London, Aug. 10-17. 13 cases, 2 deaths.
India: Bombay, July 30-Aug. 6, 2 deaths; Calcutta, July 27-Aug. 3, 5 deaths; Madras, July 27-Aug. 2, 9 deaths.
Italy: Messina, Aug. 10-17, 7 cases, 1 death; Naples, Aug. 10-17, 119 cases, 17 deaths.
Mexico: City of Mexico, Aug. 18-25, 2 cases.
Russia: Moscow, July 27-Aug. 10, 4 cases, 3 deaths; Odessa. Aug. 3-17, 2 cases, 1 death; Warsaw, July 27-Aug. 10, 5 deaths.

YELLOW FEVER.

Brazil: Rio de Janeiro, July 14-23, 7 deaths.
Colombia: Bocas del Toro, Aug. 21, 1 case.
Costa Rica: Port Limon, Aug. 11-18, 8 cases, 4 deaths.
Cuba: Cumanayagua, Aug. 17-24, 1 case; Matanzas, Aug. 31, 2 cases.

CHOLERA.

India: Bombay, July 30-Aug. 6. 8 deaths: Calcutta, July 27-Aug. 3, 17 deaths; Madras, July 26-Aug. 2, 26 deaths.
Japan: Yokohama, July 20-Aug. 3, 2 cases.
Straits Settlements: Singapore, July 6-13, 1 death.

PLAGUE.

Brazil: Rio de Janeiro, July 14-28, 4 deaths.
China: Hongkong, July 13-27, 37 cases, 35 deaths.
India: Bombay, July 30-Aug. 6, 158 deaths; Calcutta, July 27-Aug. 3, 11 deaths.

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Original Articles.

AN IMPROVED METHOD OF TREATING HIGH-SEATED CANCERS OF THE RECTUM.*

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Professor of Surgery, College of Physicians and Surgeons, Columbia University, N. Y.; President New York Academy of Medicine.
NEW YORK CITY.

Many will agree with me, I fancy, in considering the Kraske operation a very unsatisfactory one for the removal of the high-seated cancers of the rectum. In addition to the depth of the wound, the more or less jagged invasion of the peritoneal cavity, the possible difficulty of satisfactorily drawing down the upper portion of the bowel, and, finally, the trouble that is involved in the proper suturing of the preserved anal portion to the proximal end, all render it, with its annoying hemorrhage, *an operation that is often*, in my judgment and experience, troublesome and devoid of surgical neatness and precision. It is true that within four or five inches from the anus the affected part of the bowel can be easily reached and removed with the creation, if the anus is involved, of a fairly satisfactory sacral artificial anus. But if the anus, and say two inches of the adjoining rectum, can be saved, a point which is of great importance to the subsequent comfort of the patient, and to do which the bowel above must be liberated and brought down, then the foregoing objections to the surgical procedure in vogue must be taken strongly into consideration. They apply as well to the methods of approach from behind, as in Kraske's method, or from the front (by the vagina), as Murphy has recently advised. The latter I have not essayed, but an experience of over 20 cases of Kraske's resection, 9 of which were followed by an attempt at union of the divided rectal ends, has markedly impressed me with the desirability of attacking highlying cancer of the rectum by a somewhat different method. The abdominal route has been tried by others but last year, i. e., in January, 1900, I ventured to practice such an extirpation after the plan that Maunsell[1] (then of New Zealand) had advised. His suggestion, as you may remember, was, to open the abdomen above the pubis, separate the peritoneum from the bowel largely and then to pass a loop of tape by a long mattress needle from the opened pelvis through the rectum and out the previously enlarged anus. By this loop he proposed to pull down the neoplasm loosened by peritoneal divisions and by some additional blunt dissection with the finger, so that it would appear at the anus, everting the lower part of the rectum as it protruded. If the protrusion was accomplished, and to do this it might be necessary to acquire more room by freely dividing the anus back to the coccyx, then the tumor was removed and the two ends of the bowel now, so to speak, out in the cold world, were easily connected by sutures and then replaced. The final step was the suturing of the divided peritoneum. This was a finely conceived operation, but it did not work with me in my trial of it, the hitch being that the tumor would not pass through the divided anus and that the forcible traction enlarged the tape openings into the bowel so much that escape of its contents was possible. I therefore changed the plan of procedure in this way: My fingers had freely detached the divided peritoneum so that the bowel and the entire contents of the sacral curve were liberated behind nearly to the tip of the coccyx and in front to the edge of the prostate; this gave me room to tie around the bowel, some three inches from the anus, a couple of iodoform tapes, about an inch apart. The intestine was here cut through and, being free, was readily raised out of the abdominal wound and held aside by an assistant. The lower end of the rectum was then seized by a forceps in the hands of another assistant, who drew it down and out of the anus in an everted condition. Untying the tape that closed this everted bowel, its lumen was opened so that a longer forceps could be carried through it into the pelvis, when the end of the upper bowel was brought down within its clasp and by it the latter was drawn through the lower bowel out into the world. A couple of needles passed through the invaginated ends of the bowel—near their margins—allowed easy union by sutures of their edges (with the knots inside the bowel) and replacement of the same followed. After the peritoneum had been sewn together and to the bowel so that the pelvis and general abdominal cavity had been separated one from the other by a peritoneal shelf, I deemed it best to provide drainage from the peri-intestinal space below by a tube introduced from just in front of the coccyx. These details will be better understood on inspection of Figs. 1 to 4.

The outcome made a delightfully satisfactory operation, and its success justified its repetition in two other recent cases, reports of which are here appended. Two of these patients recovered and one died, not from any peritonitis, but from a persistent diarrhea without temperature elevation. In the two that recovered inspection shows no recurrence eighteen months and nine months, respectively, after the operation. It was necessary in each case, some three to six weeks afterward, to use a No. 7 or 8 Wales rectal bougie, for there was somewhat more stenosis than is seen in the reunion of peritoneally covered bowel ends. This, however, was to be expected in a measure. The patients are well and in good health, and have one or two movements daily with ease. Some points are worth touching on a little more fully.

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* Read at the Fifty-second Annual Meeting of the American Medical [illegible] Section on Surgery and Anatomy, and approv[illegible] the Executive Committee of the Section: W. J. [illegible], and A. J. Ochsner.

[1] Lancet, Aug. 27, 1892.

1. Concerning the Division of the Peritoneum.—By drawing the neoplasm backwards the folds of the peritoneum stretching from the bladder in the male, and from the uterus in the female, are rendered prominent and a small cut is made in each, and through these openings a scissors curved on its side or the common bandage scissors can be introduced just under the peritoneum and this divided up to the bowel, across, and behind it. A transverse cut across the front of the bowel joining the two knife punctures frees the bowel entirely and by pushing downwards anteriorly the prostate is soon reached. Before, however, peeling off the sacral tissues I have found it advantageous to search for and to tie the superior hemorrhoidal artery, as this renders the operative field nearly bloodless. This exposure of the sacral curve can be carried much further upwards should necessity arise, in a hunt for enlarged glands. If the lower blade of the scissors is kept persistently against the under surface of the peritoneum no risk of damage to vessels, nerves, etc., will be experienced.

2. As to Surgical Cleanliness.—The risk of this and similar procedures is, of course, the possible abdominal sepsis from the divided ends of the bowel. I have not only exercised particular care in this respect, but have, as soon as the lower division has been accomplished, touched the divided exposed mucous membranes with pure carbolic acid, which is promptly swabbed off with alcohol, and similarly treated the upper divided gut as it rests outside the abdomen. Prior to putting in the final sutures and while the bowel ends protrude from the anus this cauterized portion is cut off also. After the eversion of the lower bowel the whole pelvis is repeatedly washed with sterile salt solution, the parts being under good exposure by the retraction of the intestines above by pads or by a broad wire-handled retractor covered by gauzes, three inches by eight inches, which admirably keeps them back like a diaphragm. I prefer this to the diaphragm that Maunsell originally proposed (loc cit).

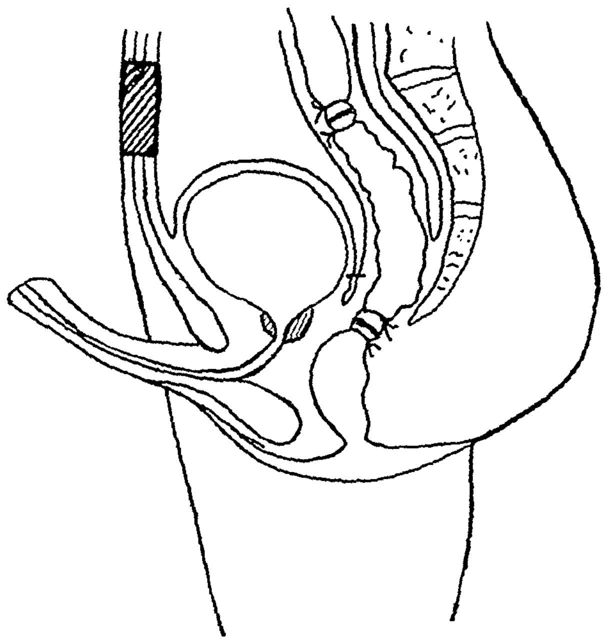

Fig. 1.—Tying off the tumor through an abdominal incision, after separating peritoneum from sacrum and bladder.

3. The Anus and the Drainage.—In my first case, to enable me to extract the neoplasm by traction, I freely divided the anus backwards with a somewhat prolonged impairment of power. In the other two cases only stretching in the usual way was resorted to. In all the [illegible] rt drainage tube was carried up to the site of the line of suture and inside the bowel was placed a small rubber tube covered with iodoform gauze.

The contrast in this operation of Maunsell, which I have only slightly modified, with the usual Kraske operation, is most marked. Its signal precision, its freedom from hemorrhage and its thorough exclusion of the area of trauma from the peritoneal cavity lead me to hope that it may come into more general use, as it conduces to the desired end in such diseases, which is, more thoroughness in their extirpation.

It is especially important to have a reliable assistant in this procedure. He should evert the lower bowel, pull down the upper, conduct the suturing, replacement and drainage. The surgeon in charge had better restrict himself to the interior abdominal work and thus be able to maintain the required asepsis. It is true that the use of rubber gloves, easily disinfected as they are, or so readily changed, will often do away with this need.

Case 1.—Mr. C. H., aged 64. Referred to me by Dr. Knickerbocker in January, 1900, with the history of pain in the lower bowel for over a year, with constipation increasing in character with occasional attacks of obstruction. Loss of flesh moderate, not more than ten pounds. Some loss of strength. No anemia.

By examination a carcinomatous mass can be felt about four inches from the anus. Into this the tip of the forefinger can be passed sufficiently to enable one to prove that the mass above can be moved quite freely. The upper end of the neoplasm can not be reached. Its nature was confirmed by a microscopic examination.

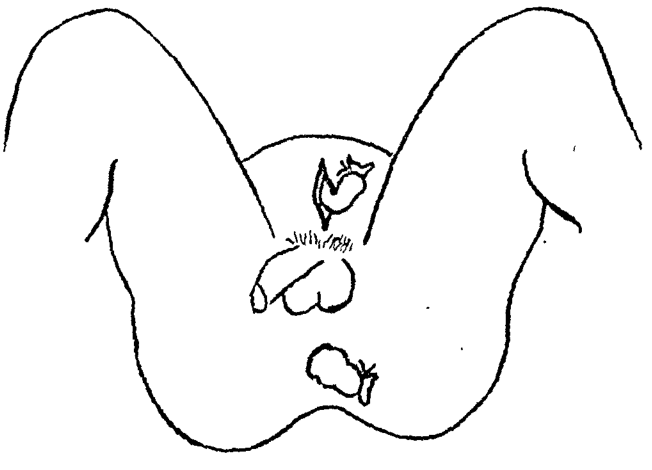

Fig. 2.—Lower end of rectum everted through the anus and the upper end of bowel drawn out of the abdominal cavity.

On Jan. 30, 1900, rectal extirpation by Maunsell's method by abdominal section was attempted with the assistance of Drs. Frank Hartley, Foote and Taylor. Nitrous oxid gas with oxygen was administered by Dr. Goldan.

The bowels had been freely moved on the day previously, as I do not like fecal flooding at the time of operation. After the abdomen was opened a transverse septum 3 by 8 inches of gauze stretched on stout copper wire with a handle was used to retain the small intestines above the pelvis. It answered its purpose very well. The peritoneum was cut through on each side of the rectum back to the sacrum and also across just behind the bladder. The contents of the sacral curve were peeled off after tying the superior hemorrhoidal artery. Several small glands were found here. None could be found above the upper limit of the peritoneal division. An attempt was made by a loop of tape drawn through the upper part of the tumor out through the anus to pull down the growth, but this failed though the anus had been enlarged and the rectum itself previously dilated by Dr. Hartley by means of specula and fingers. The tugging not only failed, but tore the gut badly and was abandoned as impracticable. Therefore, a tape of iodoform gauze was applied around the rectum below the tumor and a clamp was fastened just above this. On dividing the intervening intestine the tumor was able to be lifted outside the abdominal cavity after a little further liberation of the peritoneum covering the mesentery. The tumor which was four inches long, that is to say, its upper limit was 8 to 9 inches from the anus, was cut off and the tied end of the bowel remaining was sterilized by pure carbolic acid, as was also the anal end of the rectum left in the pelvis. Dr. Hartley now, with a forceps, seized the lower portion of the bowel and everting it caused it to protrude through the anus. Another introduction of the forceps through the everted gut caught the end of the upper bowel and this in turn was drawn through the everted anal portion. Both ends of the rectum were held *in situ* for a time by two long straight needles passed across their wall at right angles near the suture line, which was freshened by cutting off the cauterized edge. Between 20 and 30 interrupted fine chromicized catgut sutures were used to close the circumference of the bowel. The united portion was then drawn up into position by slight traction from Dr. Weir. After this the divided peritoneal edges were carefully sewn together by interrupted sutures, first freely irrigating the raw pelvis, which was drained from below by a drain inserted thither through the wound reaching to the coccyx. The operation lasted over three hours by reason of the time spent in endeavoring to pull down and drag out the tumor in accordance with Maunsell's directions. The patient had no shock, but was found to have on coming out of his anesthesia a complete muscular and sensory paralysis of his entire left arm. During the anesthesia both arms had been fastened above his head, which latter, moreover, for ease of working the somewhat cumbrous apparatus of the mixed anesthesia, had been kept strongly to the right side, thus all the more stretching the brachial plexus. It may be said that it required some six months for him to recover from this, my first experience in position paralysis. His recovery from the operation was satisfactory and prompt. He was up and about in three weeks, a slight mural abscess delaying a little his progress. He noticed at the end of six weeks some little trouble in defecation, and I found on examination that a cicatricial contraction linear in character had occurred which yielded to a No. 3 to No. 8 Wales bougie in the course of a month. Since then he has been in good local and general condition.

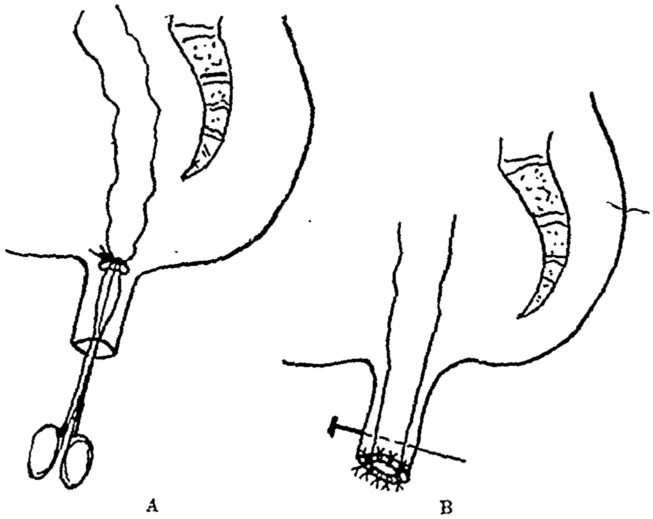

Fig. 3.—A. The upper bowel drawn out through the everted lower end of rectum. B. The ends of the two portions of the rectum sewn together.

CASE 2.—Mrs. A. H. T., admitted to Roosevelt Hospital, Oct. 17, 1900, with this history: She began six months ago to have blood and mucus preceding stools, which continued up to time of admission without any considerable increase. Six weeks ago pain was felt deep in the pelvis, which was not increased by defecation; aching in character but worse at times. No diminution in size of fecal mass. Bowels regular. Slight loss of flesh.

Examination showed general condition good. Rectal: 3½ inches from anus an ulcerated mass 1½ inches in width attached to anterior and left side in a sessile manner; finger can not reach above it; slightly tender; not markedly hard; no constriction. No glands felt. No bleeding from examination. Rectum slightly movable. Microscopic confirmation of carcinoma.

Operation.—Oct. 27, 1900, anesthetic, gas and ether. Trendelenburg position. Celiotomy in median line; intestines retracted upward by 3 by 8 inch gauze-covered retractor. Tumor found movable and running upwards and involving the upper part of rectum and lower part of sigmoid. Peritoneum divided on each side of diseased gut; 4½ inches excised between ligatures. Distal stump invaginated through *rectum* and anus. Ligature removed; proximal stump then drawn through everted distal portion; a circular enterorrhaphy done outside rectum. Gut retracted into abdominal cavity again; peritoneum sutured over it. Abdominal wall closed. Drainage posterior to anus. Operation almost bloodless. Glands in hollow of sacrum not much involved.

Course.—Uneventful recovery; bowels moved ninth day; all drains removed and wounds healed by fourteenth day; slight discharge of muco-pus from rectum for two weeks more.

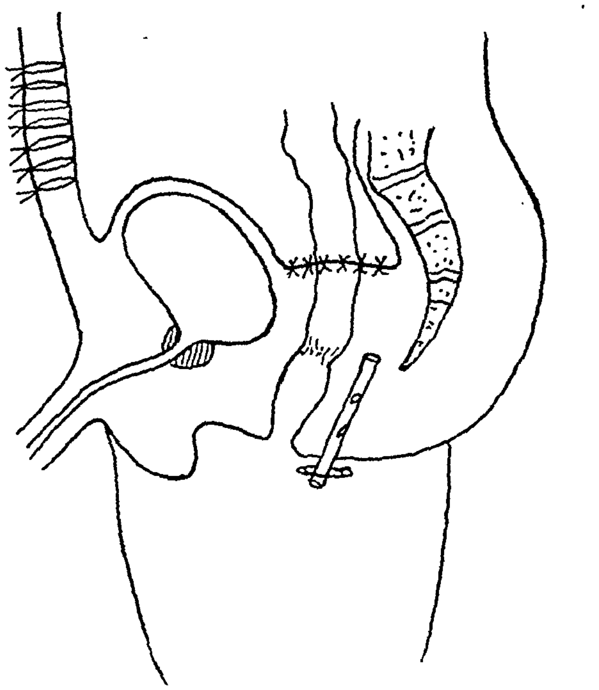

Fig. 4.—The united bowel replaced with posterior drainage, and the divided peritoneum so sewn together as to shut off the general peritoneal cavity from the pelvis.

Developed mild pneumonia then, transferred to medical side from which discharged improved, Dec. 20, 1900. Three months after operation a smooth stricture felt of some thickness, admitting No. 6 and 7 Wales bougie. Movements twice a day. In good general health when seen in May, 1901.

CASE 3.—Man, 54, sent to me by Dr. Forman, of Freehold, N. J., with a history of rectal trouble going back many months. from about 2½ inches from the anus upwards so that deep above pubis its impulse from below could be felt. Was only in fair condition. The operation was done in the manner previously described, but it varied in two ways. There was much more than the usual oozing of blood, and after opening the peritoneum and separating the wall it was found that the infiltration of the carcinoma extended along the right lateral wall toward the anus so that there was at this point not more than 1 to 1½ inches of sound intestinal wall. This in its eversion demanded its truncation and also additional loosening of the upper bowel from its mesentery. The other steps were as usual. He did well for twenty-four hours and then began to have a diarrhea without pain or vomiting or distension, which was not controllable, and which brought about a fatal issue at the end of the fourth or fifth day.

THE PRESENT STATUS OF THE CARCINOMA QUESTION.*

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There is no subject in pathology and surgery that has been studied with more care and diligence during the last two decades than the carcinoma question. The most intense interest in this subject was awakened with the origin and development of the modern science of bacteriology. As soon as it became known that all inflammatory processes are caused by specific pathogenic micro-organisms, it was natural that by reasoning from analogy the conclusion was reached that carcinoma is a parasitic disease. There are so many similarities between chronic infective diseases, notably tuberculosis and carcinoma, that we can readily appreciate the motives that led to the investigations in all parts of the civilized world concerning the microbic origin of carcinoma. Various methods of tissue staining, cultivation and inoculation experiments have all been utilized by thousands of earnest investigators in their efforts to discover the essential microbic cause of carcinoma. Numerous intracellular and extracellular bodies have been discovered and described as the specific parasitic cause of carcinoma, but for none of them has the claim been substantiated by the crucial tests. Searching criticisms from different reliable sources have shown almost conclusively that these bodies are not living organisms, but the products of degeneration of the cell protoplasm of cell inclusions of a non-parasitic nature. From an etiologic standpoint, very little has been added to our knowledge since the epoch-making labors of Virchow, Cohnheim and Waldeyer.

Something has been gained by the study of tumors in plants and in the lower animals in contributing to our knowledge of the etiology and pathology of tumors in general. Pathologic processes in plants are much simpler than in animals, owing to the absence in the former of many complicating factors, such as nerves and blood vessels; at the same time, the plants are constructed upon a much simpler embryologic plan. Both animal and vegetable cells have in common the nitrogenous carbon compound called "protoplasm." The idea of carcinoma being a local manifestation of a general dyscrasia has been abandoned years ago. Virchow established by his immortal researches that great pathologic law, *omnis cellula e cellula,* which applies with special force to the origin and growth of carcinoma, as well as other tumors, and the histogenesis of all inflammatory swellings. Students of this subject are now all agreed upon the fact, well established by the most accurate and painstaking microscopic investigations, that carcinoma, in all its histologic and clinical varieties and in the different anatomical localities where it originates, is a local disease, and that generalization only takes place by metastasis from the primary tumor.

Pathology has been materially advanced by careful microscopic work concerning the origin, growth, multiplication and life-history of the carcinoma cell and its manner of local and general dissemination. The atypical irregular mitotic figures which are seen in the segmenting carcinoma cell are in strong contrast with the regular symmetric mitosis observed in indirect cell division in normal tissue. The metastatic processes have been traced step by step through the lymphatic channels and the systemic circulation, and it has been demonstrated beyond all doubt that the secondary tumors are the direct offspring of migrating carcinoma cells from the primary tumor, and that the pre-existing tissues take no part in the tumor formation, primary or metastatic. With these few exceptions, the enormous energies expended in determining the true nature of carcinoma have yielded very little of scientific or practical value.

From these introductory remarks we can formulate the first proposition.

Proposition 1: The most notable contributions to the present status of the carcinoma question are to be found by the *investigations which have thrown new light on the origin, growth, segmentation* and *manner* of local and general dissemination of the carcinoma cell.

Definition.—The definitions of carcinoma must necessarily vary in accordance with the idea entertained by the author or speaker regarding the nature of the disease. That no unanimity has been reached in defining carcinoma becomes very evident in the perusal of the most recent literature on the subject of tumors.

"A tumor is a new formation of tissue possessing atypical structure, not exercising any function of service to the body, and presenting no typical limit of growth." —Ziegler.

The following is very similar: "A tumor proper is a mass of cell tissue or organs resembling those normally present, but arranged atypically. It grows at the expense of the organism, without at the same time subserving any useful function."—C. P. White.

An allusion to absence of function in any definition of carcinoma is superfluous, as the most characteristic clinical feature of this tumor consists in progressive destruction of tissues regardless of their anatomic structure and physiologic function.

Author's definition: "Carcinoma is an atypical proliferation of epithelial cells from a matrix of embryonic cells of congenital or post-natal origin."

This definition includes what is known of the histogenetic origin of carcinoma. It refers the tumor to its primary location in mesoblastic tissue, and the origin of its cellular elements to a matrix of embryonic epithelial cells. In 1846 Pigué explained the occurrence of congenital tumors by inclusion of embryonic remains, a process he termed *diplogenesis.* Remak, in 1851, distinguished the three germinal layers and believed the epithelial cells were the histologic origin of carcinoma. In 1855 Cruveilhier described an enchondroma of the hand, and traced its origin to an imperfect ossification of cartilage at the site of tumor formation. In 1860 Heschl gave a description of the origin of dermoid tumors in the orbital region, neck and perineum, which he claimed were the products of inclusions derived from the epiblast. The theory of embryonic tumor germs was placed upon a scientific basis by Durante in 1874, and a year later by Cohnheim, a theory so warmly championed by Waldeyer and other contemporaries. The heterotopic location of the epithelial cells distinguishes carcinoma from all the benign epithelial tumors. Atypical proliferation of epithelial cells means their growth and multiplication in a locality where epithelial cells have no legitimate citizenship. The matrix may occupy a vascular location from the very beginning, when embryonic epithelial cells have been displaced into mesoblastic tissue during the development of the embryo in the case of congenital matrices; or when in a burn or wound or an inflammatory process embryonic cells become buried in the mesoblast after injury, or destruction of the membrana propria in matrices of post-natal origin; or, finally, if the matrix is confined to the epiblastic or hypoblastic embryonic layer, the carcinoma dates back to the time when the embryonic cells passed through and beyond the membrana propria into the vascular mesoblastic tissues. The above warrants us in framing

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* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section: W. J. Mayo, H. O. Walker, and A. J. Ochsner.

Proposition 2: Carcinoma is a tumor resulting from an atypical proliferation of epithelial cells from a matrix of embryonic cells of congenital or post-natal origin.

Origin and Histogenesis of Carcinoma.—The first attempt to trace tumors to their legitimate histogenetic source was made by Virchow, who believed that the carcinoma cells, like the cells of nearly all tumors, were derived from the connective tissue. He found epithelial cells far away from their normal location, and from their resemblance to epithelial cells he called them epitheloid cells. He believed that these cells were produced in the localities in which he found them. Virchow's theory predominated, until Remak established the doctrine of the independence of the different histologic elements, and founded the law of the normal succession of cells, which has remained firm and unaltered up to the present time. In the light of recent embryologic investigations, the doctrine of metaplasia, as expounded by Virchow and his contemporaries, is no longer tenable. Connective tissue can not produce epithelial cells, and epithelial cells are never transformed into connective tissue; hence,

Proposition 3: The law of the legitimate succession of cells holds true in the origin and growth of tumors, both benign and malignant, as well as in the production of normal and inflammatory tissue.

Barfurth takes the position that tumors originate before and after birth from a partial or complete separation of cells or groups of cells from their organic connections, traumatism being an influence capable of causing the epithelial metastasis. The separated cells, no longer subject to the restraining influence of their normal connections, and still receiving an adequate nourishment, grow and form tumors which, according to the size and organization of the segregated mass, correspond in general structure with the organ from which they are derived, sometimes more, sometimes less.

A somewhat similar view is entertained by Adami, only he presents the subject in a stronger light, and bases upon it a new theory of tumor formation which he calls "habit of growth." This theory presents many convincing points. He says: "Briefly, this theory is based on the fact that cells and their descendants, which for long periods have been subjected to certain influences whereby their properties and structures have become modified, eventually retain those properties after the influences referred to have ceased to act upon them. I base it again upon that principle of inertia already indicated—a principle which some years ago (1896) in this connection I referred to as the 'habit of growth.' Whatever the origin, therefore, of the tumor proper, however it started, what makes the tumor is the assumption by the primary cells of that tumor of the habit of work, and according to the extent of this replacement, so do we set the various grades of tumor formation from the most benign to the most malignant."

Fabre-Domergue's theory of the nature of epithelial tumors is based on the supposition that from the most benign papilloma and adenoma to the most virulent carcinoma they all constitute an uninterrupted chain of genetic processes, the same only gradually varying tumors. The slightest disorganizations of the normal behavior are shown by the papillomata and adenomata, which he terms "entheliomata"; to these are added without any sharp lines of distinction the more disorganized epitheliomata and carcinomata. The cause of the abnormal growth is the *"disorganisation cellulaire,"* that is, the displacement of the axis and segmentation direction of the cells to the basal membrane. In a normal condition the nuclear karyokinetic figures stand perpendicular to the basal membrane, so that the equatorial plates form a parallel layer to the basal membrane. If segmentation takes place in another direction, it is an indication of tumor growth. This theory is a short-lived one, and I doubt if any other observer has made the same distinction between such karyokinetic processes in normal and tumor cells.

Ribbert maintains that carcinoma does not begin in the penetration of epithelial cells into the connective tissue, as taught by Thiersch and others, but from the growth of the subepithelial connective tissue. This subepithelial connective tissue proliferation elevates the epithelial cells, disturbs their proper anatomic relation, and envelops them in connective tissue; and these cells then continue to grow in the direction of least resistance, that is, in the lymphatics and connective tissue spaces. Hauser, with most modern pathologists, takes the opposite ground. He has observed during the very early stages in the growth of carcinoma of the stomach the epithelial lining hypertrophied and continuous with the submucous epithelial infiltration composed of cells of the same structure. The writer has seen numerous specimens of epithelial carcinoma of the skin presenting an identical picture during the very earliest stages of tumor growth. The connective tissue proliferation takes place later, secondarily, after the epithelial cells have invaded the vascular tissue. The earliest stage in the development of a carcinoma is invariably an active proliferation and migration of epithelial cells.

As carcinoma is always developed from a matrix of epithelial cells, and only embryonic cells possess migrating power, we are prepared to defend

Proposition 4: As carcinoma always originates from epithelial cells, primary carcinoma in mesoblastic tissue is impossible from a histogenetic standpoint, unless a *matrix* of embryonic epithelial cells has become displaced during the development of the embryo, or when embryonic epithelial cells have become buried in mesoblastic tissues, after birth, by injury or disease.

W. R. Williams very correctly opposes the parasitic origin of carcinoma from the difference in the histologic structure of the cells which constitute the mass in carcinoma, and inflammatory products. Carcinoma differs morphologically, according to the structures whence it originates, and which it resembles histologically, as seen in the different organs; while inflammatory products present the same structure independent of their anatomic location or character of tissue involved. The great resemblance between the primary and secondary tumors could not be explained as the product of an inflammatory process. The writer has had numerous opportunities to examine specimens during the very earliest stages of glandular involvement, and has never failed to find as the nucleus of secondary tumor formation a group or groups of epithelial cells, which resembled invariably in every respect the cells in the primary tumor. These facts afford sufficient ground upon which to base

Proposition 5: The histology and histogenesis of carcinoma speak against the parasitic origin of this disease.

Nearly all pathologists take it for granted that the stroma of carcinoma consists of the pre-existing connective tissue fibers and their descendants. Epithelial cells in normal and pathologic conditions are never converted into connective tissue. Carcinoma begins as an infiltration of the vascular connective tissue by migrating embryonic epithelial cells; hence the only source for the stroma is the connective tissue.

Williams, of Baltimore, finds that when the reticulum of the carcinoma is of new formation, it is usually devoid of elastic tissue fibers. The tumors in which newly-formed elastic fibers occurred either contained a large amount of connective tissue stroma, or the newly formed fibers were in connection with pre-existing elastic elements of the original tissue involved by the tumor. These, as well as numerous similar observations, lead to

Proposition 6: The stroma of carcinoma consists of pre-existing connective tissue fibers and their descendants.

Asymmetric Karyokinesis in Carcinoma Cells.—The exaggerated vegetated capacity of carcinoma cells, as compared with the productive power of the cells of normal tissue, suggests irregular karyokinesis. Ferris has made an elaborate study of the morphologic changes in the cells in carcinoma. The most important of his observations shows that bipolar mitosis is more indicative of malignancy than the multipolar. The production of multipolar and asymmetric mitosis by chemic agents seems to suggest that a faulty chemistry may be a factor in the etiology of carcinoma. Hypochromatic and asymmetric mitosis are found usually only in carcinoma. Their presence, therefore, may prove of considerable diagnostic value.

Nedjelsky made an extended investigation of cell division more especially as it occurs in carcinoma. According to this observer, cells multiply by karyokinesis and by direct segmentation. In neither sarcoma nor carcinoma did he find any exclusive form of amitotic cell division, and in all pathologic processes various forms of amitotic cell division may be seen. In some of the tumors, particularly in an ovarian carcinoma, the author found both mitotic and amitotic segmentation.

Different types of pathologic karyokinesis were discovered in the tumor tissues studied. Amitotic cell division is initiated by an active increase in the size of the nucleolus which gradually segments. In some instances the nucleolus divides simultaneously into several new nucleoli. The division of the nucleolus is connected with that of the nucleus, the process, as a rule, being that the nucleolus lies at right angles to the long axis of the nucleus and approaching the walls of the latter, as it elongates, eventually fusing with it. The segmentation of the nucleus is often asymmetrical. The study of atypical cell division in tumors deserves accurate and more extended study.

Hemmeter places great weight on pathologic mitosis as an indication of malignancy. In carcinoma of the stomach he believes that a correct diagnosis can be made by microscopic examination of segments of tissue in the stomach contents by observing the presence of pathologic mitosis, more especially if with this condition the existence of atypical formation of tubules can be demonstrated. It is now a well-established fact that the carcinoma cells multiply by mitosis (Flemming), karyokinesis (Schleicher), nuclear segmentation (O. Hertwig), cytodiaresis (French authors). The process of segmentation as observed by different pathologists is usually atypical.

Pianese has made the most exhaustive study of the structural changes which take place in the epithelial cells in carcinoma during segmentation. He describes:

1. Comparatively typical, bipolar symmetrical mitosis. *a.* Hyperchromato-mitosis, hypochromato-mitosis. *b.* Giant mitosis.
2. Atypical mitosis. *a.* Pluripolar, atypical mitosis. *b.* Atypical, asymmetrical mitosis.
3. Abortive mitosis.

The above recent researches concerning the manner of cell division in carcinoma support

Proposition 7: Carcinoma cells usually multiply by irregular, atypical karyokinesis, and this pathologic segmentation is an important indication of malignancy and as such is of considerable diagnostic value.

Local Growth.—One of the most conspicuous clinical features of carcinoma is its progressive extension *in loco.* The primary tumor grows at the extreme of the adjacent tissues, regardless of their anatomic structure. It respects no tissue. A carcinoma of the skin, if allowed to pursue its own course, attacks in succession the subcutaneous connective tissue, muscles, tendons, fascia, periosteum and bone. A carcinoma of the uterus frequently does not destroy life until the rectum and bladder have become involved. A carcinoma of the pylorus in the advanced stage usually involves the liver and pancreas. Local extension of carcinoma may also take place by the growth of the tumor masses in the interior of glandular ducts. In carcinoma of the breast, for instance, a perforation of one of the ducts by the tumor is followed by a speedy obliteration of its lumen by tumor growth which fills the duct somewhat in the same manner as an injection mass which becomes attached to the intact epithelial lining. There is no other tumor or disease that so constantly and to the same extent invades adjacent tissues and organs, and such clinical manifestation is a strong evidence of malignance, and is expressed in

Proposition 8: The progressive extension of a tumor to adjacent tissues and organs, regardless of their anatomical structure, is a strong proof of its carcinomatous character.

Metastasis.—While Proposition 8 refers to one of the constant clinical manifestations of carcinoma, it is of less diagnostic value than the regional and general dissemination of the disease by metastasis, which is observed so constantly during the later stages of carcinoma. As a rule, regional metastasis takes place through the lymphatics; general metastasis through the systemic circulation.

The exhaustive researches of Regaud and Barjon appear to prove that the lymphatic vessels in carcinoma are destroyed, and are not reproduced, which must be regarded as a means of protection against regional and general infection. The large lymphatic channels are often used as pathways for the diffusion of carcinoma, but are seldom infected themselves. The cells from the periphery of the tumor ultimately find their way into the lymphatic channels, and are carried with the lymph stream to lymphatic glands, which serve the purpose of a filter, in which the migrating cells become entangled.

localize and establish an independent center of tumor growth.

Borst has made a very careful study concerning the behavior of the endothelial cells lining the lymph channels when the seat of invasion by carcinoma. He found, 1, endothelial cells in a passive state, without a trace of alteration; or 2, they undergo inflammatory hyperplastic proliferation, and, finally, 3, they take part in the formation of new connective tissue. Even when the endothelial cells gave rise to a colossal proliferation, he could never satisfy himself that they were ever transformed into carcinoma cells, and took no part in the destructive process. On the other hand, they seemed to be in their normal as well as altered conditions antagonistic to the carcinoma cells.

The next proposition is upheld and fully endorsed by all pathologists of the present day.

Proposition 9: Regional metastasis in carcinoma takes place exclusively through the lymphatic channels, and the pre-existing lymphatic structures take no active part in the origin and growth of the secondary tumors.

General Metastasis.—General metastasis may occur by the progressive extension of infection of the lymphatics after the last lymphatic filter has been passed and carcinoma cells find entrance into the general circulation, but such a source of general dissemination is rather the exception than the rule. Usually general metastasis takes place in a more direct manner by extension of the carcinomatous process to veins, and the entrance of carcinoma cells into the general circulation from a tumor thrombus. The researches of Goldman tend to prove that the veins in carcinomatous tumors are involved at an early stage. He stained the specimens by the Unna-Taenger orcein method. Even in the primary tumor he found the veins frequently implicated by the carcinoma tissue perforating the vein walls. The same takes place in the blood vessels of the carcinomatous lymphatic glands, and distant metastatic tumors. The arteries are seldom found involved by carcinoma to the extent of causing more direct general dissemination. The carcinomatous affection of veins appears either, 1, in the form of an obturating tumor thrombus with complete degeneration of the vein wall, or 2, as an intramural extension of the tumor with the symptoms of a proliferating endophlebitis, during which the lumen of the vessel and its wall may be preserved for a long time, or 3, a circumscribed perforation of the carcinoma cells into the vein. During this manner of extension of the tumor to the veins coagulation symptoms of the blood may be entirely wanting.

In all of those events, carcinoma cells reach the venous circulation and either become lodged in the vascular pulmonary filter, giving rise to secondary tumors in the lungs, or they pass through the capillary network of the lungs, enter the arterial current, and become arrested in the capillaries of a distant organ or organs, where they establish independent centers of tumor formation.

Ribbert explains the retrograde transportation of carcinoma cells through the venous system by assuming that the cells which enter the veins soon become surrounded by a layer of the third corpuscle of the blood, and, owing to the great viscidity of the minute embolus, become atached to the inner surface of the vein wall. Without impulse of the heart these minute epimural masses are propelled against the venous current and again become adherent to the intima, an occurrence which is repeated without the heart's action, so that eventually by this method of intravenous transportation wide retrograde dissemination of the disease may take place without obliteration of the lumen of the vessels.

Retrograde extension of carcinoma is of more frequent occurrence through the lymphatics than the veins.

Calzavara describes a very interesting case of this kind. The patient was a woman, 55 years of age, the subject of carcinoma of the body and cervix of the uterus. In the lateral wall of the vagina two hard submucous nodules were found just below the cervix. On removal of the uterus and the two nodules it was found that the uterine tumor presented the typical form of adeno-carcinoma. The submucous vaginal tumors presented an identical structure. In this case the migration of carcinoma cells from the uterine carcinoma through the lymphatics by the retrograde route is clearly shown, as the vaginal mucous membrane was intact. Retrograde extension of carcinoma through the lymphatics is not infrequently seen in advanced cases of carcinoma of the mammary glands after the disease has reached the superficial lymphatics of the skin. Undoubtedly in many of these cases the retrograde extension takes place by carcinomatous thrombo-lymphangitis.

Proposition 10 explains the usual manner in which general metastasis takes place in carcinoma.

Proposition 10: General dissemination of carcinoma usually takes place by direct implication of veins in the primary or secondary tumors. Carcinoma cells reach the venous circulation from an intravenous tumor thrombus, by carcinomatous endophlebitis, or, finally, by perforation of the vein wall by isolated carcinoma cells. Retrograde intravenous extension of carcinoma is due to the transportation against the venous current of minute emboli of carcinoma cells surrounded by a mantle of the third corpuscles of the blood which move step by step upon the intima. Retrograde extension through the lymphatics may take place in the same manner, but there is very little doubt that it is more frequently the result of carcinomatous endolymphangitis.

Is Carcinoma on the Increase?—This question is attracting a great deal of attention at the present time, and is deserving a most careful investigation. Barling, Payne, Jackson and Park are of the opinion that the frequency of carcinoma is rapidly increasing. Statistics appear to sustain this view. From investigations made in Massachusetts with reference to this subject, W. F. Whitney comes to the following conclusions:

"1, the death-rate based upon the total number of deaths and the total population has been made; 2, the rate for each age period (decade) above 30 has been made; 3, the ratio of deaths from cancer to the total number of deaths above 30 and for each age period, also to deaths other than from acute infectious diseases. In whatever way the subject was studied there was found a marked increase in the death-rate from this disease."

Newsholme and Edmund Andrews claim that the alleged increase of carcinoma is more apparent than real. Substantial proof can be advanced for the correctness of this position. More accurate diagnosis, more frequent postmortems, a more general resort to operative interference and increased longevity are some of the more important arguments in proving the relative increase of carcinoma. Carcinoma is a disease of advanced age, hence, with an increase in longevity the number of cases of carcinoma would increase. Andrews has shown by statistics that the average age of persons living in Chicago thirty years ago was 15 years, while at the present time it is 29 years. Before the microscope came into general use as a diagnostic resource many carcinomatous tumors were mistaken for something else, and vice versa. The great advances that have been made in diagnosis have revealed many internal carcinomatous affections that only two or three decades ago would have been overlooked. For these reasons we are warranted in stating in

Proposition 11: The increase of carcinoma as claimed by some recent statistics is more apparent than real.

Etiology.—Very little actual progress has been made during the last five years in the elucidation of the etiology of carcinoma. This subject is receiving at the present time everywhere well-merited attention. In this part of the paper the writer proposes to utilize the more important literature on the parasitic nature of carcinoma *pro* and *contra,* which has accumulated during the last few years. Search for the microbe of carcinoma is a laudable undertaking, but so far it has not yielded any definite reliable results.

PREDISPOSING CAUSES.

Heredity—Every surgeon of large experience has met with numerous cases in which he could trace carcinoma to an hereditary origin. The writer has had cases in which the disease could be traced through several successive generations. The percentage of cases in which carcinoma has been shown to be hereditary is estimated differently by different authors. Paget found a family history of carcinoma in 33 per cent. of the cases collected. Bryant in 12 per cent.

In studying the influence of heredity, it is not fair to exclude from the statistics distant cancerous relatives, as has been done by Cripps, because it is well known that congenital deformities, physiognomy, and mental peculiarities frequently reappear several generations apart, and in distant relatives. There is no reason to doubt that an aptitude for carcinoma is transmitted in a similar manner. What such an heredity predisposition consists of is not known. There are few surgeons, if any, who would not subscribe to

Proposition 12: Heredity is a generally recognized potent predisposing cause of carcinoma.

Age—Advanced age plays an important rôle in the etiology of carcinoma. De La Camp collected 9906 cases of carcinoma with special reference to age as a predisposing cause. Among this number there were only 19 cases less than 20 years of age. Four of these were observed in the new Hamburg hospital. One case was a girl, 19 years old, the subject of a large carcinoma of the ovary. The second case was a large ulcerating carcinoma of the stomach with extensive metastases in a patient 17 years of age. The third, a carcinoma of the pylorus, the size of a walnut, in a boy of 16. The last was a boy, 16 years old, suffering from carcinoma of the rectum with extensive metasases. The writer has seen a carcinoma of the breast in a girl, 21 years of age, a carcinoma of the rectum in a boy 17, and several cases of carcinoma of the stomach in persons between 25 and 30 years of age. These observations tend to prove

Proposition 13: As a rule, carcinoma occurs in persons of advanced age, but occasionally is met with in persons less than twenty-five years of age, and in the latter case the disease is characterized clinically by its great malignancy.

Trauma.—Ziegler has studied the clinical history of 499 tumors in the Munich Clinic, from 1890 to 1895, with special reference to their traumatic origin. This number comprised 328 cases of carcinoma, and 171 of sarcoma. This author found the general assertion corroborated that sarcoma is more likely to follow a single injury; carcinoma, on the other hand, repeated injuries or continuous irritation. In the 328 carcinoma cases the disease developed after a single injury 35 times, and in consequence of prolonged irritation 92 times; in the 171 cases of sarcoma the disease could be attributed to trauma 35 times, chronic irritation 32 times. Löwenthal collected 800 cases in which tumor formation is claimed to have been the result of trauma, and he is inclined to believe as the result of his investigations that trauma has a greater influence in the etiology of tumors than is generally admitted.

Proposition 14: Carcinoma seldom follows a single injury, but develops more frequently in consequence of repeated injuries or prolonged continuous irritation.

Racial, Dietetic, Climatic and Topographical Influences.—It is a well-known fact, confirmed by reliable and extensive statistics, that some races are much more predisposed to carcinoma than others. Diet appears to exercise some influence in the causation of carcinoma. Legrain states that epithelioma is unknown in Algeria, except as it appears in a European. This may possibly be due to an almost exclusive vegetarian diet. Verneuil and Reclus asserted long ago that the herbivora were much less liable to carcinoma than the carnivora; and they ascribe the sixfold increase in the number of patients suffering from carcinoma at their hospital the last forty years to the increased consumption of meat by the laboring classes.

Behla has made a study of the geographical influences in the causation of carcinoma. He states that carcinoma is very rare in the extreme northern and southern countries. The temperate zones of Europe, Asia and America appear to act as a predisposing cause. Carcinoma is very prevalent in Australia, rare in Central Africa, and almost unknown in New Guinea.

Haviland, in his researches, found the disease most frequently along river courses and in localities subjected to periodic inundations, while it is less prevalent in high altitudes and in the spring districts at the head of rivers. It was a noteworthy fact that geologically the alluvial soil appeared to constitute a local predisposing cause, while a chalky or lime soil had the opposite effect. Heimann made similar inquiries, and came to the same conclusions.

Proposition 15: Among the predisposing causes of carcinoma must be enumerated racial, climatic and topographical influences.

Inflammatory Products, Scar Tissue and Benign Tumors.—Carcinoma not infrequently develops in the inflammatory product of tubercular affections of the skin. Desbonnet collected from different sources 86 such cases, and since that time a great many additional cases have been reported.

Goodhart has called especial attention to irritation as a cause of ichthyosis of the tongue and of carcinoma. It has been known for a long time that this superficial chronic inflammation of the tongue frequently precedes carcinoma. In many instances carcinoma of the tongue and of the mucous membrane of the cheek has been traced to prolonged irritation and inflammation caused by displaced carious teeth and to the sharp projecting margins of normal teeth. One of the most instructive illustrations of the influence of prolonged irritation and inflammation in the causation of carcinoma is chronic eczema of the nipple, known as "Paget's disease of the nipple." Another inflammatory product very often the starting-point of carcinoma is the wart. The warts upon the forehead and cheeks of aged persons, "verruca senilis," most frequently undergo such a transformation. The occurrence of carcinoma in an inflammatory product is undoubtedly due to the displacement or penetration of embryonic epithelial cells into the inflammatory product, where they are brought in contact with vascular tissue, which increases their vegetative capacity, and alters their habits of life. A similar histologic cause explains the frequency with which carcinoma develops in scar tissue, where the disease almost without exception begins as a subepidermal nodule from a matrix of embryonic epithelial cells buried in the mesoblastic tissues.

Among the benign tumors which are most prone to become transformed into carcinoma are the papillomata and adenomata. In both of these tumors the essential parenchyma of the tumor, the epithelial cells, are beyond the reach of blood vessels. Any and all influences, local and general, which are capable of stimulating cell growth beyond the physiologic requirements, and growth beyond the physiologic requirements, and which result in penetration of the membrana propia by young epithelial cells, are the causes upon which depends the transition of a benign epithelial tumor into a carcinoma. Among the local causes which bring about such a transformation of a benign into a malignant tumor may be enumerated injury, prolonged or repeated irritation, and incomplete removal of the benign tumor by excision, cauterization and ligation. The above remarks may be summarized in

Proposition 16: Chronic inflammatory products, cicatrices and benign epithelial tumors produce local conditions favorable to the development of carcinoma.

Parasitic Theory of the Etiology of Carcinoma.—The local, regional, and systemic dissemination of carcinoma is strongly suggestive of the existence of some virus or microbe as the essential cause of the origin and spread of carcinoma. In many respects carcinoma resembles several infective processes, the microbic origin of which has been well established. The infectiveness of tuberculosis was recognized a long time before its microbic origin was demonstrated. Pathologists for years have made numerous experiments to prove the inoculability of carcinoma. Hahn, Bergmann, the writer and others have extended their experiments to the human being. In the case of an inoperable carcinoma of the leg, the writer implanted subcutaneously fragments of asceptic carcinoma tissue at two points on the affected limb. A little nodule formed at the point of inoculation during the first two weeks, which gradually disappeared after that time. These nodules represented the product of proliferation of the tissues adjacent to the implanted aseptic foreign substance, in response to the local irritation caused by the carcinomatous graft, which acted the part of a local irritant. The new tissue which formed around the graft was completely removed in the course of two or three weeks by absorption. It is my intention in this part of the paper to utilize the most important literature of the last five years pertaining to the efforts made to prove the parasitic origin of carcinoma, and the material utilized will be divided into two classes, according to the results obtained by experimentation.

Alleged Positive Results.—Among the first to study the parasitic origin of carcinoma upon a scientific basis were Nedopil (1881), Schenerlen, Schill and Frère, Darier, Wickham, Malassez, Albarran, Soudakewitsch, Pfeiffer, Sjöbring, Thoma, Podysoski, Delépine, Ruffer, Stroebe, Steinhaus, O. Israel, Karg, Eberth, Ribbert, Hauser, Hanau, Klebs, Ballance and Shattuck, Kurloff, Ohlmacher and Korotneff. Among the more recent investigators must be mentioned Plimmer, Roncali, Walker, Sawtschenko, J. J. Clark, Foa, Vedeler, Park, Sternberg and many others. The discovery of coccidia in the nuclei of carcinoma by Thoma, in 1889, gave rise to a renewed stimulus to the search of micro-organisms in carcinoma tissue. The parasites found in carcinoma and which have been credited with being the essential cause of the disease are the following:

Schizomycetes 1. (Schenerlen and Koubashoff); histozoons; coccidium of Darier. 2. Coccidium of Albarran. 3. Coccidium of Sjöbring; gregarina moncystidea, or, 4, Rhapalocephalus canceromatosus of Korotneff. 5. Ameba sporidium of Pfeiffer, or sarcolithus of Adamkiewicz. 6. Hematozoon or Kahaur. 7. Histozoon and ameba of Nepvean.

Blastomycetes: 1. Fuchsinophile bodies of Russell. 2. Canceromycet of Niesen. 3. Saccharomyces niger of Maffuci. 4. Blastomycetes of Sanfelice and Roncali.

The parasitic theory takes it for granted that carcinoma is an infectious disease of a chronic type, and is supported to a certain extent by clinical observations; because, if there is a disease, which, by its origin, its rapid development, the frequency of regional and general metastases, the accompanying profound impression on the organism proves to be infectious, it is carcinoma. However, all of the experiments so far made do not answer the requirements laid down by Koch to prove the parasitic origin of this disease.

Positive results from inoculation were obtained by Eiselsberg, Hanau, Francotte and Richter in mice; Firket in rats, Langenbeck, Follin, Lebert and Weber in dogs; Guyon in dogs and cats, and Quinquaud in guinea-pigs; Wehr made 26 experiments with one successful result only; Norinsky had two positive results in 15 experiments.

Hanau inoculated the base of the scrotum of three rats with fragments of carcinoma tissue from a carcinoma of the vulva of a female rat, with positive results. Pfeiffer succeeded in transmitting a carcinoma from one rat to another; Moran from one white mouse to another white mouse; Goujon from one guinea-pig to another, and Klencke from horse to horse.

Auto-inoculations in persons suffering from inoperable carcinoma are four in number. These experiments were made by Hahn, Cornil and the writer with three positive and one negative results (Senn).

Moran, quoted above, succeeded in inoculating a cylindric-celled epithelioma of a white rat through several generations of the same species of animals. Metastasis followed the inoculations. With each generation the transplantation of the neoplasm became more and more difficult, and the malignancy of the tumors produced was gradually diminished. Sanfelice believed that the bodies found in carcinoma cells were blastomycetes, because of their morphologic resemblance. He obtained a pure culture of a blastomyces, "saccharomyces neoformans," from the juice of fruits and cultivated it upon vegetable media. Injection of pure cultures in guinea-pigs produced a sarcoma-like tumor, with glandular involvement, and metastatic foci in the kidney, liver and spleen. The same results were obtained by inoculating mice, while rabbits and dogs proved more refractory. He also succeeded in isolating pure cultures of blastomycetes from human tumors and from tumors of cattle and pigs. The parasite thus isolated, however, did not manifest any pathogenic activity.

Plimmer repeated the experiments of Sanfelice and reached approximately the same results and conclusions. He *found those bodies in 1130 out of 1270 cases of* carcinoma examined. The number of parasites appeared to be proportionate to the malignancy of the tumor. In this respect the results of observation were the reverse of those observed by R. B. Greenough. The latter states: "Furthermore, those cases which showed the most satisfactory specimens of bodies, and of the four cases in which the bodies were most numerous, three were clinically characterized as being of slow growth." The cultivation of this parasite proved most successful under amebic conditions.

Max Schueller has found minute refractile spheres, oval or round, three times the size of a blood corpuscle, with a granular center and a capsule in giant cells of sarcoma and epithelial cells of carcinoma, and believes that these bodies are the cause of malignant tumors, but so far he has not succeeded in reproducing the disease in animals by inoculation. R. B. Greenough, of Boston, who has made a series of careful experiments on the so-called "Plimmer bodies," has reached the following conclusions:

"1. The appearances known as the 'Plimmer bodies' were found in each of 23 cases of breast cancer. 2. They were more numerous in the periphery of the tumors, and in the metastases. 3. They were not found in areas which had undergone even slight degeneration, whether before or after removal. 4. They were more numerous in the slow-growing carcinomata, and less frequently found in the rapidly-growing ones. 5. They were more numerous in scirrhus than in medullary or adeno-carcinoma types of cancer. 6. They were not found in three cases of the epithelioma type (one of which was a typical Paget's disease of the breast). 7. They were present in one case of ovarian carcinoma, and absent in another case of general peritoneal cancer, of probable ovarian origin."

The most recent contribution in support of the parasitic origin of carcinoma is from the New York State Pathological Laboratory, by H. R. Gaylord. The paper appeared in the May number of the *American Journal of Medical Sciences,* and contains much that will interest bacteriologists and pathologists in the near future. He is a firm believer in the protozoon theory of carcinoma. He found these bodies present in all malignant tumors examined in varying number and forms. He followed Plimmer's method of staining, which he considers a great advance in the parasitic study of carcinoma. The form and size of the parasite vary according to age. The mature form possesses ameboid movements. He reproduced the disease in several species of animals by different methods of inoculation. It is too early to accept or reject the deductions he formulates from his own researches. The work done in the important institution of which Dr. Gaylord is director will give a new impulse to the study of the parasitic nature of carcinoma, and within a short time we may expect reports from different laboratories confirming or correcting his conclusions. It is very unfortunate that this contribution first reached the lay press, because the profession for good reasons, regard with suspicion concerning startling discoveries heralded through the general press.

From the evidence produced above, it is not difficult to conceive that the parasitic theory of carcinoma at the present time is based upon inadequate experimental proof. Two great objections present themselves against the validity of the claim that carcinoma is a parasitic disease: 1. The variety of microbes and bodies which have been found in carcinoma tissue by different experimenters, and for all of which, at different times and by different authors, the same specific pathogenic qualities have been claimed. 2. The histologic structure of the products of implantation of carcinoma tissue, or inoculation with the supposed carcinoma germs, does not correspond with the structure of a true carcinoma. This statement applies with special force to the fruit germ of Sanfelice. During the early period of scientific investigation of the cause and nature of tuberculosis, many experimenters produced in different ways local and metastatic pathologic conditions, which resembled in many respects genuine tuberculosis histologically, but lacked the essential microbic cause, and hence was designated as pseudo-tuberculosis. For the same reason, the new tissue produced by the implantation of carcinoma tissue, or inoculation with the so-called carcinoma bodies, might very properly be called pseudo-carcinoma.

In the light of searching criticism, the results of experimentation on the positive side of the parasitic theory of carcinoma can be summed up in

Proposition 17: The positive results of implantation and inoculation experiments have so far failed in establishing beyond all doubt, upon a bacteriologic and histologic basis, the parasitic theory of carcinoma.

Negative Evidence of the Parasitic Origin of Carcinoma.—A vast amount of material has accumulated during the last few years, calculated to combat the claim made by a number of enthusiasts that carcinoma is a microbic contagious disease. The contagiousness of carcinoma is firmly believed by the people, and this opinion is firmly rooted for a long time. A few isolated cases of carcinoma of the penis, attributed to sexual intercourse with women the subject of carcinoma of the uterus, furnish no proof of the contagiousness of carcinoma, as Demarquay collected 134 cases of carcinoma of the penis, and only one of the patients had been exposed to such a source of infection.

No well-authenticated case of inoculation carcinoma has occurred among surgeons who have frequently injured their fingers and hands during operations for carcinoma, while inoculation tuberculosis from the same cause has been frequently observed. The same can be said of persons who take care of carcinoma patients, or who live with them in the same room.

A number of interesting cases of auto-inoculation have been reported by Waldeyer, Klebs, Spiegelberg, Luecke, Kaufmann, Ricard, and Hyvert. At least some of these inoculations are wrongly interpreted, as extension to adjacent parts may have taken place through the lymphatics. Carcinoma epidemics have been described by Arnaudet, Brown, Desplons, Roy, Lucas-Championnière and Marrichon, but these reports have not been confirmed by subsequent and more reliable observations.

Pianese mentions the four cases of inoculation from man to man by Alibert, who experimented upon himself and his students, all with negative results.

On May 4, 1901, the writer inoculated himself with carcinoma tissue immediately after he had completed a radical operation for advanced carcinoma of the lower lip. The patient from whom the malignant graft was obtained was an Irishman 60 years of age. The submental and submaxillary lymphatic glands were involved. The glands were immersed in warm saline solutions and from one of them a fragment the size of a split pea was used for implantation. A small incision was made about the middle of the forearm over the supinator muscles under strict aseptic precautions. One of the margins of the little wound was undermined sufficiently to make a pocket large enough to receive the graft. After implantation the wound was closed with a horse-hair suture and iodoform collodium. The operation was performed by one of my assistants. Dr. Lyman. The carcinomatous nature of the glandular affection was proven by microscopic examination of the gland from which the graft was taken. In the course of a week a nodule the size of a pea made its appearance, which remained stationary for two weeks when it gradually disappeared. At the present time (June 22) a linear red scar indicates the site of implantation.

Inoculations from man to animals, made by Peyvilhe, Schweninger, Klebs, Cazin and Duplay, Valentin, Vogel, Weber, Dubuisson, Hyvert, Chatin, Hénocque, Billroth, Villemin, Cothin, Shattuck, Paulowsky, Fischel, Bogninet, D'Auna and Arcangeli, Pianese and Mayet were all negative. Inoculations from animal to animal were made on an elaborate scale by Paul Bert, Rinne, Doutrelepont Duplay and Cazin, Lablanc, Senn, D'Auna,, Trasbot, Cadiot, Thiroloix, all with negative results.

Sippel implanted fresh carcinoma tissue underneath the dura in 25 rabbits. In not one instance were metastases or lymphatic infiltrations observed.

Peterson and Exner made experiments on guinea-pigs and mice with the saccharomyces neoformans of Sanfelice. They witnessed a general dissemination of this organism throughout the body of the animals experimented upon, but came to the conclusion that this yeast fungus has no connection whatever with the etiology of malignant tumors; and that the cellular inclusions in carcinoma are to be identified only to a limited extent with the fungus, and, finally, that the diseases in man attributed to the saccharomyces have absolutely nothing to do with malignant tumors.

According to Sternberg, Maffuci and Sirleo, the new tissue produced by some blastomycetes when injected into animals can not be regarded as having the histologic structure of carcinoma or sarcoma, but rather as granulomatous productions.

Fabre-Domergue, in his recent work on epithelioma, is outspoken regarding the parasitic origin of carcinoma. He says: "The forms described as sporozoa have merely the morphologic resemblances and not the true characteristics. All the pseudo-coccidia so far pictured are connected by insensible gradations with the tumor cell, from which they emanate by way of degeneration."

Gratia and Lénaux have made inoculation experiments with fresh carcinoma tissue into the lower animals, and uniformly failed to reproduce the disease. Fresh tumor tissue was ingrafted into the skin, the peritoneal cavity, and the walls of the stomach. Fresh carcinoma juice was injected into the organs most frequently the seat of the disease. They did not succeed in transmitting the disease from human to dog, or from dog to dog, and consequently conclude that contagiousness direct or indirect has not been present; that the parasitic origin is yet a matter of doubt; that the course and pathogenesis are still undecided.

Kurscherf and Bartsch repeated the experiments of Adamkiewicz on carcinoma implantation. They ascertained that if careful aseptic precautions were employed, the grafts degenerated and were absorbed.

Suspecting that the soil had something to do with the prevalence of carcinoma, Ruver obtained soil from parts of England where carcinoma is prevalent to a high extent, mixed it with the pulpified carcinoma tissue and placed rats upon it so that the feet and tail were constantly in contact with the mixture. The animals were also exposed to the spray of carcinoma tissue, and the accessible mucous membranes were kept in a state of irritation, and yet, in spite of all those potent etiologic agencies, the disease could not be reproduced in the animals thus experimented upon.

Sternberg has arrived at the conclusion that, while the investigations into the parasitic origin of malignant tumors have given rise to a more careful study of the cells, they have not advanced our knowledge of the etiology of tumors a single step. MacFarland, from his own observations, and studies comes to the conclusion that carcinoma is not a specific disease, that its etiology may be said to be dependent upon the inherent proliferative tendency of the epithelium; that is, it is epitheliogenetic, not parasitic.

Curtis has been experimenting five years with the saccharomyces tumefaciens. In that time he has never been able to produce a real tumor, compared to those observed in the human subject. The lesions produced were always the same; either a local growth of the fungus, sometimes of large size, or an inflammatory product with leucocytosis and more or less connective tissue proliferation—a granuloma. He makes the assertion that in non-ulcerating carcinoma he has never seen a single blastomyces.

Duplay and Cazin decide from their own observations that it is improbable that malignant growths are transmissible, either by graft or inoculation, from animals of one species to those of another.

Steinhaus has well said recently: "It is time to take up again the investigations on carcinoma, without neglecting the scientific method, as the principal cause of the errors committed so far is due to the neglect of the scientific method."

Peterson regards Darier's psorosperms to be forms of degeneration of the epithelial cells. He obtained his best pictures by staining with pictrocarmin and hematoxylin. The latter was used in weak solution and the preparations were overstained. They were then removed for from one-half to two minutes to a solution of the ferric sulphate oxydatum, and then decolorized in HCl—alcohol.

The painstaking researches of Pianese, of Naples, seem to prove that all carcinoma parasites so far discovered and described are the products of cell alterations.

Schwarz made a critical study of 40 cases of carcinoma in reference to the parasitic origin of the disease, and came to the conclusion that the "carcinoma parasites" which have been described under different names are either leucocytes or the products of cell degeneration and abnormalities of nuclear segmentation

He discusses at length and in a logical manner the intracellular and extracellular cell inclusions.

Lubarsh, in his recent classical treatise ("Zur Lehre von den Geschwülsten u. Infektionskrankheiten," Weisbaden, 1899), studied the blastomycetic theory of Sanfelice, Roncali, etc., experimentally, and obtained only negative results.

All inoculations with Sanfelice's original cultures without exception yielded negative results. The experimental work of E. H. Nichols, of Boston, in search for the parasite of carcinoma, its cultivation and attempts to reproduce the disease artificially in animals, is summed up by him as follows:

"Typical cancer bodies have been found generally present in certain types of cancer. They never have been found in epidermoidal cancer. Attempts to produce cancer in animals by inoculating them with bits of tissue from human cancer so far have uniformly failed. No attempt to isolate an organism from human cancer has succeeded. Inoculation of animals with the organisms of Sanfelice and Plimmer has resulted in the formation of nodules composed of proliferated connective tissue cells and newly formed blood vessels (granulation tissue), but no tumor resembling cancer of human beings has been produced."

Professor Adami, in his recent instructive article on carcinoma, says: "In other words, so far as our present knowledge permits us to conclude, bacteria—schizomycetes—below a certain degree of toxicity of their products, can not maintain an existence in the tissues of animals. They succumb to the anti-bacterial mechanisms of the organism, and, succumbing, any proliferative activity they may have induced comes to an end. In plants, it is true, we meet with definite bacteria living a symbiotic existence in the rootlets and causing well-marked overgrowths. It may be eventually found that bacteria are capable of initiating progressive cell growth in the higher animals, but of this power proof is so far wanting." Again: "Continuous purposeless growth is characteristic of all forms of tumors proper; nevertheless, as I have already stated, in a very large group of tumors all the evidence we possess points surely to the fact that microbes have not initiated the growth, and are not concerned in the continuance of the growth." The evidence introduced to prove the non-parasitic side of carcinoma overbalances by far the testimony furnished on the positive side, both as far as the number of investigators is concerned, and the logical deductions drawn from their work. We are, therefore, warranted in stating in

PROPOSITION 18: A careful study of the experimental researches and bacteriologic and histologic investigations concerning the etiology of carcinoma does not at the present time warrant us to claim for this disease a parasitic origin.

TREATMENT.

As we are still ignorant concerning the essential etiology and true nature of carcinoma, the treatment pursued up to the present time has been largely of a palliative, tentative and empirical nature. The only real advances made have been in its operative treatment. It is true, from time to time remedies have been proposed for which specific curative properties were claimed.

Internal Medication.—Arsenic, condurango, turpentine, chelidonium, and many other drugs administered internally have all had their advocates, but none of them on extensive trial have shown any decided, to say nothing of specific, curative effect in retarding or arresting the growth of carcinoma.

During one of the meetings of the American Medical Association, Washington Atlee extolled the therapeutic virtues of arsenic in the treatment of carcinoma, more especially after operation, with a view of preventing a recurrence. He insisted that this drug should be invariably administered, and that its use should be enforced, even if the stomach would tolerate only a fraction of a drop of Fowler's solution. Since that time the writer has always followed out his directions, but after an extensive experience he is not prepared to assign to it any curative properties whatever. Jonathan Hutchinson is of the opinion that the use of arsenic rather favors than retards the evolution of carcinoma.

Denissenko claims to have obtained more benefit from the internal use and subcutaneous injections of chelidonium majus. The injections were not made into the tumor, but into the tissues surrounding it, where the injected irritating substance initiates a sclerosis like other sclerogenic agencies. The injections used were composed of half a gram of the extract and the same quantity of water, properly sterilized by boiling, and injected every two to five days.

Berezkin gave this remedy a faithful trial in nine cases by internal administration and hypodermic use, and failed to observe the slightest curative effect.

J. Carne Ross asserts that the internal use of large doses of cinnamon mitigates the pain and retards the growth of carcinoma.

Mr. Snow advocates very strongly the use of opium as soon as it has been ascertained that the disease is beyond the reach of a radical operation.

PROPOSITION 19: The experience of centuries and the internal use of innumerable remedies have demonstrated that so far carcinoma has not been materially influenced for the better by this method of treatment.

Parenchymatous Injections.—Direct medication of the carcinoma tissue by parenchymatous injections has had an extended but unsatisfactory trial. Acetic acid, nitrate of silver, and the different antiseptics have all failed in making a curative impression on the evolution of the disease; in fact, in most instances tumor growth was favored by such attempts. Schwalbe many years ago advocated the injection of alcohol into the loose connective tissue around the periphery of the tumor, and reported a number of cases in which this treatment appeared to have been useful in retarding if not arresting further growth of the tumor. The stimulating effect of this powerful antiseptic on the connective tissue resulted in sclerosis and diminished the blood supply to the tumor. The writer has given this treatment an extensive trial, and believes it is the least objectionable and most useful form of treatment by parenchymatous medication. He has used Lannelongue's sclerogenic chlorid of zinc solutions with similar results. The experience with parenchymatous injections up to the present time is voiced in

PROPOSITION 20: Direct medication of carcinoma tissue by parenchymatous injections has no influence in retarding or arresting the growth of carcinoma, while the injection of sclerogenic substances into the connective tissue around the border of the tumor appear to restrain the local extension of the disease by impairing the blood supply to the parenchyma of the tumor.

Local Applications.—Upon the very highest authority methyl-blue was recommended a few years ago as a local remedy in the treatment of carcinoma. The ease with which this staining material permeates the protoplasm of cells was considered a strong argument in favor of its therapeutic value. Accumulated experience, on the whole, with the use of this agent has been disappointing. Darier has seen good effects from the local application of a 20 per cent. solution to open, ulcerating carcinoma. He advocates strongly as a palliative measure the conversion of an open into a closed carcinoma by a plastic operation about the fifteenth or twentieth day after treatment with methyl-blue.

W. Mitchell recommends the local use of formalin in the treatment of certain inoperable malignant tumors. He uses a 20 per cent. solution. The dry eschar produced by the formalin is removed after a few days, when the formalin is again applied, and this procedure is repeated until the tumor is removed. The applications occasion a great deal of pain, and are followed by considerable edema of the surrounding tissues. Very little is to be expected from local applications in the treatment of ulcerating carcinoma; hence it is safe to assert in

PROPOSITION 21: Local applications of any kind in the treatment of ulcerating carcinoma must be considered at best only in the light of palliative measures.

Cauterization.—Among the earliest attempts to destroy carcinoma were the red-hot iron and chemical caustics. This method of treatment has its advocates to-day.

Czerny and Truneck have found a solution of arsenic in equal parts of alcohol and water, 1 to 75, of much value in the treatment of ulcerating non-operable epithelioma. The ulcerated surface is thoroughly cleansed and brushed daily with the solution, and the eschar is gradually thickened. With the increase in the thickness of the eschar a stronger solution is applied. Pain is caused only in the beginning of the treatment. Finally, the eschar becomes detached and the epithelioma is destroyed. Three cases of extensive epithelioma of the nose in aged persons are reported as cured. This treatment was given a thorough trial in four cases of epithelioma of the skin in Bruns' clinic, and Honsell, who made the report, states distinctly that in all of them the result was negative. The arsenical application did not affect the carcinoma tissue to any extent. It is safe to affirm in.

PROPOSITION 22: The actual cautery and chemical caustics have only a limited field of usefulness in the treatment of open inoperable carcinoma. They should never be employed in the treatment of closed carcinoma, as a substitute for the knife.

Serum Treatment.—If carcinoma is a microbic disease, the search for a healing serum must be regarded as the most logical attempt to find an effective cure. So far all efforts in this direction from Adamkiewicz carcinoma serum to Coley's fluid have proved utter failures. Coley himself does not claim much for his toxins in the treatment of carcinoma. The report on Coley's treatment, made in 1896 by Stimson, Gerster and Curtis, to the New York Surgical Society, represents the experiences and opinions of nearly every surgeon who has given the treatment an extended trial. "1. The danger of the treatment is very great. 2. The alleged successes are few and doubtful in character, and the most that can be fairly claimed for the treatment by toxins is that it may offer a slight chance of amelioration. 3. Valuable time is often lost in operable cases by pursuing the treatment. 4. The method should never be resorted to except in absolutely inoperable cases."

The writer has given this treatment a long and faithful trial in a very large number of operable cases, and has never witnessed the slightest improvement; on the other hand, it generally aggravated the local conditions and hastened the fatal termination.

Peterson made a careful study of the literature of the bacterial treatment of malignant disease, more especially of the cases treated in Czerny's clinic, and came to the conclusion that the treatment is not of the slightest use in carcinoma; that in very exceptional cases sarcoma disappears under its influence; and that the treatment itself possesses many elements of danger.

The employment of blood serum obtained from animals, goats, dogs, asses and sheep, treated by injecting carcinoma juice until the animals no longer responded, has also yielded only negative results. Six years ago this method of treatment was highly extolled by Emmerich and Scholl, and Richert-Héricourt and a number of other French surgeons. The latter reported fifty cases treated by this serum, and claimed to have observed marked improvement in the symptoms under its influence. Bruns treated five cases of carcinoma, and one of malignant lymphoma, by this method. In not a single case did the injections prove of the slightest benefit in diminishing the size of the tumor.

Rydygier made use of the Emmerich-Scholl carcinoma serum in three cases of inoperable carcinoma. Not the slightest curative effect was observed in any of them. The negative results following the different methods of serum treatment heretofore employed would speak rather against than in favor of the parasitic nature of carcinoma.

PROPOSITION 23: The treatment of carcinoma by different sera has without any exceptions yielded only negative results.

Operative Treatment.—The operative treatment of carcinoma has undergone a decided improvement during the last decade. A better knowledge of the manner of local and regional extension of the disease has resulted in a more effective and radical technique in operations upon different organs and regions of the body. The more radical procedures are the outcome of the laborious and accurate researches of Heidenhain, who showed the way to surgeons in following the disease along the pathways of local and regional extension. He emphasized the importance of early and thorough operations. He was one of the first who, upon a scientific and anatomic basis, urged surgeons to perform more radical operations, by following the regional lymphatic channels and glands and remove them with the organ primarily affected. He insisted that local recurrences are seldom the result of traumatic inoculation, but follow in consequence of imperfect removal of the regional metastases. Every surgeon now recognizes the importance of early and radical operations. In this country Halsted was the first one who fully appreciated the teachings of Heidenhain, and accepted and applied in his practice his suggestions. In his last paper on the operative treatment of carcinoma of the breast he makes his operations more radical of late. He almost invariably removes both pectoral muscles and clears out the supraclavicular space, and says in defense of this procedure that in 34 per cent. of cases of mammary carcinoma it will be found that the disease has extended to this region. He does not consider it necessary to divide the clavicle preliminary to this step of the operation. He begins the dissection at the junction of the internal jugular and subclavian veins, and this point is exposed by a vertical incision along the posterior border of the sterno-cleido-mastoid muscle. He now removes both pectoral muscles, and thinks it probable that he will come to remove the contents of the anterior mediastinum. Of 76 patients operated upon over three years ago, 31 are now living without evidence of local recurrence of metastasis. Of 10 patients who died, more than three years after the operation, only one showed local recurrence. Thus, over 52 per cent. of his patients lived more than three years without either local recurrence or metastasis. This is certainly an enviable record, which it would be found difficult, if not impossible, to duplicate, and furnishes the strongest argument in favor of the most radical treatment.

Sanderson and others approve of the clearing-out of the supraclavicular space when the apex of the axilla is extensively involved, or when the supraclavicular glands are enlarged.

A. Lane advises section of the clavicle as a preliminary to clearing-out the triangle, but, as a rule, this can be done without dividing the bone. In very extensive disease of the axilla, supraclavicular space and Mohrenheim's fossa, the same author advocates amputation at the shoulder joint. He argues that in such cases the loss of the arm would in any case result from the dissemination of the disease, and death would soon follow, consequently we are justified in sacrificing the arm, because we may obtain full recovery with merely the loss of the arm. The same heroic treatment under similar conditions was recommended by Theodore McGraw in 1878, but it is doubtful if the suggestion from either of these sources will ever become an accepted practice. The same radical procedures which are now so generally practiced in the removal of a carcinomatous breast are being applied with the same thoroughness in the removal of other organs. Thus, in carcinoma of the lip, it is not generally conceded that the submental and submaxillary glands should be removed with the adipose and connective tissue in one connected piece at the same time.

As one of the modern curiosities in the modern operative treatment of carcinoma must be mentioned the suggestion first made by Beatson, to perform oöphorectomy for carcinoma of the breast. Cases have been reported by Beatson, G. E. Herman, Stanley Boyd, Watson Cheyne, and others. The results were usually only temporary, if any. Cheyne believes the operation might prove of value in young subjects. The curative effect of this operation is attributed by its advocates to the occurrence of atrophy of the gland, and fatty degeneration of its parenchyma, which conditions are established after the normal menopause, and hence would follow the anticipated menopause by the removal of the ovaries. This freak of modern surgery will not find any new advocates. The modern operative treatment of carcinoma is summed up in

Proposition 24: The early and radical operative treatment in carcinoma offers the only prospect in permanently eliminating the disease.

Contra-indications to Operative Treatment.—The operative treatment of carcinoma has at the present time its well-defined limits. Many lives are lost prematurely and much additional suffering induced by indiscriminate operations for malignant disease. A radical operation is only indicated if, from the extent of the disease and the physiologic importance of the organ primarily involved, all diseased tissue can be removed without any immediate or remote danger to life. An incomplete operation invariably aggravates the local conditions and shortens life. An incalculable amount of harm has been inflicted by ignoring the importance of contra-indications to radical attempts, and many patients have succumbed prematurely to such indiscreet attempts. The surgeon has no right to cut life short by such interference simply because the patient is suffering from an incurable disease. If the general and local conditions of the patient are such as to preclude the possibility of obtaining a result warranting a radical attempt, the surgeon must be content to limit his functions to palliation and should never ignore, from a moral and professional standpoint, the significance of the time-honored adage, *nil nocere*.

Time of Recurrence.—Carcinoma statistics showing the permanency of the curative results of operative treatment are very misleading. The three-year limit is still regarded as a standard, which is certainly a great mistake. The writer has seen in a number of his cases recurrence at the site of operation six and seven years after operation, in consequence of which he has become fully convinced of what is stated in

Proposition 25: The permanency of the results of the operative treatment of carcinoma can not be determined in less than ten years after the operation.

Proposition 26: A radical operation for carcinoma should never be attempted unless the local conditions and general health of the patient are such as to promise an equivalent of the immediate and remote risks to life and comfort involved by the operation.

Suggestions.—If carcinoma is, as we have every reason to believe at the present time, the produce of an erratic cell proliferation beyond the limits of the influences which preside over and regulate normal tissue growth, it appears rational to search for some remedy which would affect the parenchyma of the tumor in one of two ways: 1. An agent or agencies which would destroy the epithelial cells by causing speedy and early degeneration of the imperfectly developed epithelial cells. 2. The employment of a local or general remedy or remedies possessing the power of converting embryonic into mature epithelial cells. Ligation of the principal arteries supplying the tumor tissue with blood, and the employment of sclerogenic substances have been employed for the purpose of accomplishing the first object, but so far only with indifferent results. Very little, if anything, has been accomplished in the conversion of the low type of epithelial tissue into mature tissue, that is, in transforming a carcinoma into a benign epithelioma. It is, however, not beyond the range of possibilities that future experiments and observations will open up a wide field of usefulness by the discovery of such agencies that will exert a beneficial or curative effect on the essential tumor elements by inciting degenerative processes, or by converting them into tissue of a higher, mature type; remarks which lead us to frame

Proposition 27: Taking it for granted that carcinoma is the product of an erratic, planless cell growth outside of the range of the physiologic influences which preside over and regulate normal growth and tissue repair, it appears logical in the search for curative agencies to make experiments and observations with the view of finding a remedy which would destroy the tumor by causing an early and speedy degeneration of its parenchyma, or which would possess the property of converting embryonic into mature epithelial cells, thus converting a carcinoma into a benign epithelioma.

CIRRHOSIS WITH PIGMENTATION.[*]

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The cases of cirrhosis of the liver with pigmentation of the skin or tissues, or of both together, constitute a small but most interesting group. There has been a great deal of speculation as to the etiology of these cases. The purpose of this paper is to present as briefly as possible the history of this form of cirrhosis, the clinical symptoms and pathology of the disease and the present views entertained concerning its etiology.

HISTORY.

Pigmentation of the skin and tissues, other than that resulting from the staining with the bile, does not occur in association with the atrophic cirrhosis of Laennec. In 49 cases of this type of cirrhosis that have been treated in the medical wards of the Johns Hopkins Hospital up to the present date, no single instance of permanent pigmentation has been observed. Of 8 cases of hypertrophic cirrhosis of the liver 1 presented a remarkable grade of bronzing of the skin. Reference may be made here to the fact that a considerable percentage of a consecutive series of livers at autopsy have been shown to contain iron-holding pigment in the liver cells and connective tissue. Thus, Lindemann[1] examined 25 livers, which practically showed no pathologic change, and found a deposition of iron-containing pigment in about two-thirds of them. Kretz,[2] on the other hand, in the examination of a much larger series, found hemosiderin in only 5 to 6 per cent. of the livers.

The forms of cirrhosis with pigmentation have been studied chiefly by German and French physicians. Previous to two years ago, when Opie[3] reported a case, there was practically no literature on the subject in English, with the exception of a brief reference to a case by Adami.[4] in 1898. The most comprehensive review of the subject has been made by Anschütz.[5]

The French physicians were the first to draw attention to the pigmentation of the skin in association with cirrhosis of the liver. In 1882, Hanot and Chauffard[6] described 2 cases of diabetes mellitus associated with hypertrophic cirrhosis of the liver and bronze-like pigmentation of the skin. The autopsy on the first case showed cirrhosis of the liver, characterized by wide bands of connective tissue. The liver cells, as well as the interlobular connective tissue, contained brown pigment granules in great quantities. The second case, which was more carefully studied, showed definite brown pigmentation of the pancreas and liver, both of which were the seat of advanced chronic interstitial inflammation, the parenchyma and connective tissue both containing masses of pigment. The stomach and duodenum were of a bluish-black color and pigment in small granules was found beneath the serosa. Four years later, Letulle reported two similar cases. In 1886, Hanot, in association with Schachmann, published a fifth case. He believed that the knowledge acquired from the study of these five cases established the existence of a new form of cirrhosis, *cirrhose pigmentaire diabètique*, and of a new clinical condition, *diabète bronzé.*

CLINICAL SYMPTOMS.

The clinical symptoms of the condition known as *diabète bronzé* are quite similar in all cases. Anschütz analyzed twenty-four cases which he had found in the literature up to 1899. The picture is one of rapidly fatal diabetes mellitus, associated with cirrhosis of the liver, usually of the hypertrophic variety. The diabetic symptoms have manifested themselves in the majority of cases within one year previous to death. Pigmentation of the skin is usually present but not constant. All the 24 cases were in males; Letulle has stated that of 30 known cases all were in men. The cases have all occurred between 30 and 60 years of age and the majority have been in the fourth and fifth decades. It has been thought that the disease is more common in France than elsewhere and the fact that 17 of the 24 cases occurred in that country would seem to support this belief. This frequency may, however, be due to the French physicians being more familiar with the condition and less likely to overlook its occurrence.

PATHOLOGY.

At autopsy the liver presents the features of a pigmentary cirrhosis. This was the type in 23 of the 24 cases. The liver was enlarged in all the cases but one. An ochre-colored pigment containing iron was present in the liver cells and connective tissue of all the cases. In 2 cases no statement was made concerning the condition of the pancreas. Of the remaining 22, all showed gross changes excepting one. In the 18 cases in which a microscopic examination was made, pigmentation of the glandular epithelium and connective tissue was present, and in 15 of the cases there was marked increase in the amount of connective tissue. The ochre-colored pigment is also present in the muscle fibers of the heart and in the lymphatic glands. The frequency of the occurrence of sclerosis of the pancreas is of importance from the standpoint of the etiology of the diabetes.

ETIOLOGY.

There has been much speculation regarding the pathogenesis of these cases of *diabète bronzé*. Hanot, Chauffard and Schachmann have held that the primary etiologic factor is the diabetes mellitus. They believe that the diabetic alteration of the blood, in association with endarteritis, which has been constant in their cases, causes a nutritional disturbance of the liver cells, with a consequent alteration of the pigment metabolism and a deposition of pigment within the cell-body. They further believe that the pigment thus formed is reabsorbed by the capillaries, and diffused possibly in the form of emboli over the entire organism. As the same form of pigment deposition takes place in other organs —e. g., the heart—as that which takes place in the liver, Letulle came to the conclusion that the pigment is formed in the cells of the various organs in which it is found, from the hemoglobin of the blood. He also holds that the diabetes is primary and thinks that the disintegration of the hemoglobin occurs under the influence of the hyperglycemia. Brault and Galliard, Hernandez, Mossé and others also consider the diabetes the primary and essential cause of the pigmentation.

Another smaller group of observers hold that the pigmentation is produced by a primary disease of the blood and that as a result of some fundamental cause there is an alteration of the blood and subsequent formation of pigment from the altered hemoglobin. An explanation must then be sought for the associated diabetes and cirrhosis of the liver. Marie holds that as a result of some primitive cause, there follows a dissolution of the hemoglobin, which is transformed by the protoplasm of the various body cells into pigment, which is deposited in them. This pigment in turn causes a degeneration and destruction of the containing cells and consequently a chronic interstitial inflammation of various organs, particularly the liver. He believes that bronzed diabetes is neither clinically nor pathologically the classic diabetes, but a distinct morbid entity. Acard, Dutournier, and Jeanselme support Marie's theory, and suggest that the diabetes is possibly only an accessory phenomenon which appears alone when the chronic interstitial pancreatitis reaches a certain grade.

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[*] Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee of the Section: Drs. Frank Billings, George Dock and J. M. Anders.

In 1889 von Recklinghausen[7] described, under the name of "hemochromatosis," a condition of pigmentation affecting various organs. This pigmentation, he states, may be either local or general. Brown pigment, which he thinks is derived from the hemoglobin of the blood, is deposited within certain tissues and gives to them macroscopic pigmentation. Quincke, in 1877, had already described a case of diffuse pigmentation in anemia, and Tillmanns observed a case of pigmentation of the liver and lymph glands following trauma. Further, Hindenlang had described a pigmentary infiltration of the lymph glands, liver and other organs in a case of morbus maculosus Werlhofii.

The anatomical features of von Recklinghausen's hemochromatosis cases are striking. The majority of the glands of the body have a deep brown color and their secreting cells contain reddish-yellow or ochre-colored granules. The liver is usually enlarged and often enormously so, the enlargement frequently involving the left lobe to a greater extent than the right. The ochre-colored granules are contained in the parenchyma cells and in Kupffer's cells, and their presence gives the organ a brownish, slaty appearance. The pancreas is usually enlarged and shows chronic interstitial disease. The pigment has the same distribution and appearance as in the cases of diabète bronzé already described. The spleen is often very much enlarged, firm and pigmented. The skin, when pigmented, shows a deposition of pigment in the cells of the sweat glands. This pigment, so far considered, has been shown to be an iron-containing pigment. A second kind of pigment, differing from the first by its occurrence in finer granules of a pure yellow color, is found in the smooth muscle cells of the stomach and intestines, of the blood and lymph vessels and rarely in those of the urinary bladder and vas deferens. It also occurs in the connective tissue of certain localities, for example, Glisson's capsule, the splenic trabeculæ and the sheaths of blood vessels. This yellow pigment does not give the reaction characteristic of iron. Von Recklinghausen called the iron-containing pigment "hemosiderin," the iron-free pigment "hemofuchsin." He thinks that both of these pigments are derived from the hemoglobin.

Von Recklinghausen described 12 cases which he considered examples of local and general hemochromatosis. He defines hemochromatosis as a condition of pathologic pigmentation due to the deposition of pigment derived from the blood. There is a form of localized pigmentation of the intestine, caused by the deposition of fine yellow granules in the smooth muscle cells. Such cases have been described by Goebel and Hintze and must not be confused with true hemochromatosis. This pigment does not contain iron, whereas in hemochromatosis the iron-containing pigment is the most striking and characteristic feature of the disease.

Opie states that the important features of hemochromatosis are: 1. The presence in the epithelial cells of various glands, notably the liver and pancreas, of an iron-containing pigment. 2. The presence of an iron-free pigment in smooth muscle cells of the gastro-intestinal tract and of the blood vessels and lymph vessels and in certain connective tissue cells. 3. The association of cirrhosis of the liver with the pigmentation. He says that to this condition, which is apparently a distinct pathologic entity, the term hemochromatosis should be limited, even though von Recklinghausen, its originator, applied it to conditions of local pigmentation as well.

In this disease the questions which are of most interest to us are: 1, the cirrhosis of the liver and its etiology; 2, its relation to the diabète bronzé of the French. Without going into detail, it may be stated that the deposition of the pigment in the liver is now universally regarded as the exciting cause of the liver changes. This deposition leads to a degeneration and destruction of the liver cells with the eventual setting up of an interstitial hepatitis.

The relation of hemochromatosis to diabète bronzé is very close and the general opinion of the most recent observers is in favor of their being identical. According to this view, the cirrhosis is merely a question of the duration of the disease. A considerable percentage of the reported cases of hemochromatosis have developed diabetes in the late stages of the disease, at once suggesting an analogy between the two conditions. Diabetes was present in 1 of von Recklinghausen's 12 cases. It will be remembered that a small group of French writers regard the diabetes the result rather than the cause of the disease, and that the essential etiologic factor is a primary disease of the blood. This group of observers hold that the diabetes only occurs when the chronic interstitial pancreatitis, resulting from the pigment deposition, reaches a certain grade. Those who have published cases of hemochromatosis with diabetic symptoms ascribe the latter to the same cause.

Buss and Opie have reported cases which seem to bridge over the gap between the two conditions. The former reported a case of diabetes associated with cirrhosis of the liver and of the pancreas and with general hemochromatosis. He found the iron-containing and the iron-free pigment in locations corresponding with those mentioned by von Recklinghausen. There is no reason to doubt that in this case the pigmentation was identical with that of hemochromatosis, while it also presents the clinical and pathologic picture to which Hanot gave the name diabète bronzé. In Opie's case, associated with hemochromatosis, there was bronzing of the skin, cirrhosis of the liver of advanced grade, and chronic interstitial pancreatitis, but diabetes was not present. Opie states, "It is evident, then, that the generalized pigmentation of bronzed diabetes is the hemochromatosis of von Recklinghausen." It will be of great interest if the pancreas in those cases associated with diabetes will be found to show the hyaline degeneration and sclerosis of the islands of Langerhans which Opie[9] has recently demonstrated in chronic interstitial pancreatitis with glycosuria and in a case of ordinary diabetes.

While Opie and others regard hemochromatosis as a distinct morbid entity, Adami and Dr. Maude Abbott[10] are not fully convinced that it is a distinct and separate disease.

Whatever the final decision as to the relationship between hemochromatosis and diabète bronzé many turn out to be, it is sufficient to say that practically all cases of cirrhosis of the liver with diffuse pigmentation of the tissues conform to one or the other of these two conditions. The cirrhosis found with pigmentation is practically always of the hypertrophic type. The liver is always firm, easily palpable and frequently the enlargement seems to involve the left lobe to a greater degree than the right. There is usually a firm, enlarged, palpable spleen associated with the cirrhosis.

Our present knowledge concerning hemochromatosis may be best stated by quoting the conclusions of Opie, which were drawn two years ago:

"1. There exists a distinct morbid entity, hemochromatosis, characterized by the widespread deposition of an iron-containing pigment in certain cells, and an associated formation of iron-free pigments in a variety of localities in which pigment is found in moderate amount under physiologic conditions.

"2. With the pigment accumulation there is degeneration and death of the containing cells and consequent interstitial inflammation, notably of the liver and pancreas, which become the seat of inflammatory changes accompanied by hypertrophy of the organ.

"3. When chronic interstitial pancreatitis has reached a certain grade of intensity, diabetes ensues and is the terminal event in the disease."

So far as I am aware, only four cases of cirrhosis of the liver with general pigmentation, or, in other words, hemochromatosis, have been reported from this country. The first was Opie's case, reported before the meeting of the Association of American Physicians in May, 1899. At the same meeting Adami, in discussion, spoke of a case to which he had referred in an article in the "Annual and Cyclopedia of Practical Medicine" for 1898, and which was later, in 1900, reported in full by Dr. Maude E. Abbott. The other two cases were reported by Osler,[11] in 1899.

Dr. Abbott's case is of especial interest, in that it is the first case of hemochromatosis that has been reported in a female. It is also of interest that none of the American cases have had glycosuria.

I shall refer briefly to Case 1 reported by Osler, as I have frequently seen the patient personally and he is still under observation. The patient is now 50 years of age and a pilot by occupation. There is nothing in his family or personal history of direct bearing on his present illness. He had used alcohol very moderately. Five years previous to the present date he had his first attack of purpura over the feet. Since that date he has had scores of these outbreaks of red blotches over the feet and legs, and recently the purpura has extended to involve the thighs. There was some swelling of the feet associated with some of these attacks. In February and October, 1897, he had severe attacks of pain between the right costal margin and iliac crest. For some time before he entered the Johns Hopkins Hospital, on May 1, 1899, the patient's friends had noticed that his face had become much darker in color and the patient himself observed that his hands were becoming darker. On examination, in May, 1899, he was a sparely built, healthy-looking man. The skin of his face was slightly bronzed. The general surface of the skin was moderately pigmented. The areolæ of the nipples and the genitalia were very much pigmented. The skin of the hands and wrists, and of the legs as high as the knees was very deeply bronzed. The liver was markedly enlarged; the edge could be distinctly felt in the median line 8 cm. below the ensiform cartilage and between 6 and 7 cm. below costal margin in the mammillary line. The surface was everywhere smooth and it was hard, firm and rounded. There was an audible friction rub over the liver on deep inspiration. The spleen was enormously enlarged, was distinctly visible and its border was palpable 6 cm. from the costal margin. The urine contained no albumin. Indican was present. The reaction for iron was also present. No sugar was found on repeated examination. Seventy-five grams of glucose were given on an empty stomach without sugar appearing in the urine. A portion of the skin of the leg was excised and Opie found the characteristic iron-containing, ochre-colored pigment granules in the cells of the sweat glands, practically demonstrating the fact that the case is one of hemochromatosis.

The patient has repeatedly returned for observation, and was examined by Dr. Osler on May 30, 1901. The same general features are still present. The bronzing of the skin had become intensified. The liver and spleen were enormously enlarged and he then had a purpuric eruption over the legs. He had been quite ill for one month and was decidedly weaker and thinner. The urine was still free from sugar. It would thus seem that if he has changes in the pancreas, of which there is little doubt, they are not sufficiently advanced to produce diabetes.

This case illustrates the long duration of the disease, which is so common in these cases. The recurring hemorrhages are of interest. This is a common symptom of the true hypertrophic cirrhosis of Hanot. Evidences of a hemorrhagic diathesis have been noted in 5 of the 24 cases of diabète bronzé collected by Anschütz. In 3 cases a moderate grade of purpura had been noted. In 1 case hematuria occurred and in 1 repeated attacks of epistaxis.

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CIRCULATORY DISTURBANCES ACCOMPANYING HEPATIC CIRRHOSIS

AND INOSCULATION OF THE PORTAL BRANCHES WITH THE SYSTEMIC VEINS.[*]

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In typical atrophic cirrhosis of the liver—the cirrhosis of Laennec—the most striking clinical features are those related to the disturbances in circulation. The obstructed portal radicals and consequent distension of the portal vein, the raising of the blood pressure in the portal vessels, the resulting congestion of the abdominal viscera, and the development of ascites are familiar manifestations. In a paper, read before this Section at the Newport meeting, in 1889, I ventured to express some views connected with this subject, which did not meet with the approval they seemed to me to deserve, and I, therefore, purpose reviving these views on this occasion.

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[*] Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee of the Section: Drs. Frank Billings, George Dock and J. M. Anders.

RELATION OF PORTAL TO GENERAL CIRCULATION.

When one considers the anatomy and physiology of the portal system of veins, it is apparent that nature seeks to prevent the entrance of portal blood into the general circulation, except by passage through the liver. The inosculations of the portal with the systemic veins are normally few and small, yet these inosculations always exist, and, in some healthy individuals, are numerous and comparatively large. In my former article[1] this matter was discussed at length. Since then the subject has been fully presented by F. Tischer, San Francisco,[2] who reproduced a diagram from Henlde's "Anatomy," showing the anastomosis of the portal vein with the superior vena cava, the inferior vena cava, and the azygos veins. Admitting that such inosculations exist, the question arises, why does not the portal blood pass directly into the general circulation? As a matter of course such passage of the portal blood would occur, provided the blood pressure of the portal was higher than that of the systemic veins, a state of affairs that undoubtedly sometimes occurs in disease: but normally this does not take place, because the portal blood pressure is lower than that of the other veins of the body.

So far as I know, Lauder Brunton[3] was the first to show the low blood pressure of the portal veins. His conclusions were confirmed by the experiments of Prof. Julius Pohlman, Buffalo, who demonstrated that in dogs, both while fasting and feeding, there was much lower pressure of the portal than of the systemic veins. The pressure was increased by feeding, but it never rose to a point equal to the general venous pressure. It is thus apparent that under ordinary conditions, even when the inosculations are numerous, the portal blood fails to contaminate the general circulation.

ATROPHIC CIRRHOSIS.

In atrophic cirrhosis of the liver the situation changes, and we find a high portal blood pressure, higher even than that in the systemic veins. If proof of this statement is needed, it may be found in the visceral congestion that attends the disease; further, in the dilatation of the portal veins, and, finally, in the increase in number and caliber of the inosculating vessels. In some cases of cirrhosis of the liver the intercommunications are so complete that the visceral congestion and ascites do not develop; or, having developed, they gradually subside. Meantime we have evidence of marked dilatation of those veins that are known to carry on a collateral portal circulation. Clinically, we recognize the dilated para-umbilical vein, the hemorrhoidal vein, and the esophageal vein, besides the new vessels in the adhesions that are often found between the liver or omentum and the abdominal walls. These vessels are seen dilated even in cases in which ascites and visceral congestion continue; but all of us have observed instances where there was marked evidence of this collateral circulation and where ascites has never occurred, although postmortem, the liver is found to be in a state of advanced cirrhosis. I have had the opportunity of following a number of these cases to autopsy; in several instances death took place through perforation of a dilated esophageal vein, leading to fatal gastrorrhagia. In some of these cases there was preceding toxemia worthy of more extensive consideration than I can present in this discussion. It is interesting to note that nearly all cases of fatal gastrorrhagia depending upon hepatic cirrhosis, that have come under my observation, have been exempt from ascites, or, if ascites were present, it was only as a terminal event. While this is not a universal rule, I find that, as to the frequency of this relation, the experience of others confirms my own. In other words, in those cases going to gastric hemorrhage, there is likely to be marked dilatation of the esophageal vein, *and although such dilatation exists, the blood pressure* in the portal vein and its branches continues so high as to endanger the thin vessel walls. It is generally admitted that many cases of cirrhosis of the liver escape ascites throughout their course, a fact which can be explained in no other way than by the establishment of free inosculations.

I have had the opportunity of studying for years several victims of toxemia, who never have had ascites, but in whom the liver is found, by all means of physical examinations, to be extremely small. One instance is that of a professional friend, Dr. P., in whom the liver can not be discovered by palpation and scarcely by percussion. More than ten years ago he was told by the late Dr. Loomis that he had cirrhosis of the liver, and such is my own diagnosis. This man is able to escape symptoms of toxemia only by resorting to light diet, consisting chiefly of milk and vegetables, and by taking every morning Friedrichschall water. If he indulges in proteids, especially shell fish, cheese or game, or takes any food in excess, he suffers, not from symptoms of indigestion, but from hebetude, dizziness, and disturbances of the urine that indicate toxemia. This man is 55 years old, and his condition has not apparently changed during the past ten years.

A similar case was that of J. C. L., a country attorney, aged 38. He had a history of typhoid fever when 23, but in other respects had been well, save that for the past ten years he had suffered from dizziness, disturbance of appetite, heavily-coated tongue, and great languor and depression. These symptoms had been more or less constant for several years when he visited me, in 1897. The physical examination showed that his liver could not be palpated; the liver dulness extended from the sixth to the eighth rib; over the liver could be heard, on auscultation, a distinct bruit, systolic in time. The patient was instructed to exclude certain articles of diet and was given Friedrichschall water. In fact he was treated much after the method adopted for my friend, Dr. P., and with similar results. The man has consulted me again within the last month, and he states that he is perfectly free from symptoms so long as he conforms to the directions, but that if he eats ordinary foods, especially those containing proteids that have undergone some decomposition, he immediately suffers, sometimes seriously, from the old symptoms. The history of this improvement under treatment extends over three and a half years.

Another very interesting case, seen with Dr. A. L. Benedict, was that of a man past middle age, a school teacher, who had always lived most carefully, but nevertheless suffered constantly from biliousness. He was compelled to keep to a light diet and to care for his digestive tract most carefully. A clinical diagnosis of contracted liver had been made several years before, although he had never had ascites. There had been no special change in his general condition when gastrorrhagia developed and proved fatal within a few days. The postmortem—the record of which I have mislaid—revealed a classic atrophic cirrhosis, with the portal vein greatly dilated, as were the vena azygos and the esophageal vein, from which latter vessel, through a "pin-hole" opening, the hemorrhage occurred.

In all of the above cases the men were very temperate. Another case, in which ascites occurred as a terminal event, was that of Mr. G., a railway engineer, seen in consultation with Dr. John Gray. The man had drank excessively of whisky for years. For a long time he had suffered from symptoms of indigestion and toxemia, which were usually attributed to alcohol. He had a muddy skin, distended capillaries, especially those around the abdominal region; his eyes were bloodshot, he was fat, and without much muscular strength. He attended to his duties as a railway engineer until a month before his death. Soon after stopping work he developed anasarca. Two weeks before death there was ascites, which required tapping; he died somewhat suddenly as the result of profuse gastrorrhagia.

Postmortem, made by Dr. F. G. Moehlau, showed the lungs much pigmented, emphysematous, free from adhesions, somewhat edematous at the posterior portions of the base. The heart was of moderate size, there was no pericardial effusion. There were red-stained vegetations on the tricuspid leaflets; there were also some thickened nodules along the margin of the mitral valves. All the valves were competent; the heart cavities were empty. The liver was light-yellow in color, universally hobnailed and cut with great resistance; the weight of the organ was about four pounds. The portal veins were dilated, but free from thrombi. The esophageal veins were tortuous and dilated, and apparently had for a long time carried on a considerable part of the collateral circulation. The azygos veins were not examined. The stomach contained several ounces of dark, fluid blood; its mucous membrane was highly congested and pigmented. The kidneys were macroscopically in good condition.

A similar case, seen in consultation with Dr. De Lancey Rochester, was that of J. C., aged 59, a business man, who had long been an alcoholic. He had complained of indigestion, bilious attacks, lassitude, and general muscular weakness. He was found to have an extremely small liver. He was under medical treatment at intervals for several years. Shortly before his death he developed ascites, and was tapped several times during the last weeks of his life. He died as the result of gastrorrhagia.

Postmortem made by Dr. H. U. Williams, eighteen hours after death, showed rigor mortis marked, moderate emaciation. On opening the abdomen, the omentum was found adherent to the anterior abdominal wall; liver adherent to abdominal wall, above and in front; liver at sixth rib on the right; pleural cavity free, and contained about two ounces of fluid; pericardium contained three drams of fluid. The lungs crepitated well and showed some edema, otherwise not important. The heart was large, pale, supercardial fat was found normal, wall of right ventricle thin; valves normal; moderate sclerosis of coronary arteries and aorta. Spleen was large, capsule thickened, on section not remarkable. Kidneys and bladder not remarkable.

The liver was deformed by the adhesions mentioned; the adhesions were marked in the neighborhood of the common bile duct. The gall-bladder contained one ounce of greenish bile; no calculi. The liver was very friable; on section it was shown to be cirrhotic and fatty. The pancreas was small, pale, fatty. The veins at the lower end of the esophagus were markedly dilated. The mucous membrane of the stomach appeared normal, its contents contained dark, reddish streaks. The ileum contained apparently fresh blood; there was no blood in the remainder of the intestines. The source of hemorrhage could not be found.

Another case, E. B., died at the Buffalo General Hospital, aged 41; the patient had been an alcoholic and died as the result of severe and repeated gastrorrhagia.

The autopsy, made by Dr. H. U. Williams twenty-four hours after death, showed rigor mortis firm; slight lividity; abdominal cavity contained a large quantity of straw-colored fluid. The omentum was adherent to the anterior abdominal wall, and the peritoneum was greatly thickened; much fibrin was present on the abdominal surfaces of the intestines. The inner muscular tissue of the abdominal wall showed edema. Fluid was found in both pleural cavities and in the pericardial sac. The heart was small, pale with normal valves; the cavities empty; the muscle pale, firm and of the usual thickness. The aorta and coronary were normal; the bronchial tubes were coated with bloody mucus; both lungs showed edema; the veins on the pleural surface of the diaphragm in the neighborhood of the esophagus, also the veins in the lower part of the esophagus and the cardiac end of the stomach were dilated and prominent. Three inches above the stomach, on the posterior aspect of the esophagus, the mucous membrane showed reddened, denuded areas the size of a lead pencil; the esophagus and the stomach were both dilated and prominent. Efforts were made to show an anastomosis between the veins of the lower part of the esophagus with the gastric veins, but these were only partially successful. The esophagus, stomach and intestines all contained blood. The liver weighed 3 pounds, 3 ounces, was coarsely lobulated and its capsule very thick. On section, the parenchyma was lobulated, and traversed by bands of fibrous tissue. The parenchyma was pale, soft, and in some places bile stained. The spleen weighed 14 ounces, with greatly thickened capsule; other organs were not remarkable. The hemorrhage was believed to have sprung from the denuded areas in the esophagus.

Another case was that of F. W. T., aged 59; a business man of high standing and strictly temperate habits. He had cholera in 1852, but otherwise had escaped sickness until six months before, when he suffered from pulmonary congestion secondary to dilatation of the heart. He had sclerosed arteries, pulmonary emphysema, an extremely small liver and a large spleen. He reported that for many years his appetite had been very slight and he had felt better when he ate sparingly. Of late his appetite further declined, and he showed evidence of marked toxemia, which was partly owing to poor elimination. The bowels were irregular, skin muddy and loaded, and the urine showed traces of albumin, containing 18.30 grams of urea in twenty-four hours and cylindroids. The man was benefited by taking Friedrichschall water, vapor baths, and a course of medical gymnastics. He was found on the floor of his bathroom in syncope, having vomited a large amount of blood. The hemorrhages were repeated during the next forty-eight hours, when he died. A rather remarkable coincidence in this case was that the hemorrhage had been predicted, because of the marked evidence of cirrhosis, the dilatation of the superficial abdominal veins, the absence of ascites, and the presence of the toxemia. It was believed that the inosculating vessels must be much dilated, and judging from the condition of the arteries, it was assumed that the veins were becoming weak. No autopsy was permitted. Here was another case of marked cirrhosis terminating in fatal gastrorrhagia in which ascites never appeared.

It is not uncommon, as I have stated, to find cases of cirrhosis without ascites dying from various affections. In these cases it will be quite uniformly found that the communicating veins are enlarged, or that new vessels have been formed through adhesions; but ascites may be absent even without the presence of adhesions, as the following case illustrates:

Mrs. A., Buffalo General Hospital, March 6, 1899. The patient was 65 years old; dead 36 hours; nutrition poor, lungs showed old disease; the pleural and pericardial cavities were dry; heart showed fatty infiltration and degeneration as proved by microscopic examination; marked sclerosis of the aorta and somewhat of the coronaries. The liver weighed 3 pounds, 13 ounces; the surface was yellow and granular; the lobules distinct; the veins of the stomach and duodenum were dilated; the spleen was enlarged, soft and dark. Other portions of the history are omitted.

In the absence of data in some of these cases it can not be proved that all suffered from toxemia, the result of inosculations; but in most of them it is so highly probable that it may be assumed.

CONCLUSIONS.

From the facts stated, I am led to conclude that the passage of the portal blood into the general circulation, without having traversed the liver, is a source of toxemia that produces definite symptoms. This view, which I propounded in 1889, was not accepted by the gentleman who did me the honor to discuss my paper, but further observation convinces me that the view is correct. We now have the opportunity for experimental proof of this explanation of toxemia in cirrhosis of the liver, in cases of epiplorrhaphy for the relief of chronic ascites, the result of hepatic cirrhosis. My attention was first called to this in a report by Mr. Rutherford Morrison,[4] in which he speaks of a "peculiar toxic condition, with sallowness and drowsiness, which sometimes followed the operation and was relieved by purgation." In other words, by lowering the portal blood pressure. In discussing this communication, Dr. Beattie stated that "Such a toxic condition was known in medicine, and cited three cases where drowsiness had gone on to complete coma, and was sometimes associated with hematuria. It commonly occurred in cases of cirrhosis without ascites, where collateral circulation had been well established by a large vein of Sappey."

Besides the cases of epiplorrhaphy reported by Morrison,[5] numerous cases have been reported both in this country and abroad. A notable contribution is that made by Packard, Philadelphia,[6] with which you are all familiar, and in which reference is made especially to the toxemia that follows operation.

Another case in point is one of twenty operated upon for deviation of the blood in the portal veins, reported by B. Schiassi.[7] The patient, a young man, had suffered from cirrhosis of the liver for ten years, with constantly recurring ascites. Since the operation he has gained twelve kilograms in weight, and at present has but a few cubic centigrams of fluid in the peritoneal cavity. During the third and fourth week after the operation intense dyspnea and profuse sweating, with slight fever, appeared after eating some raw eggs. These symptoms disappeared when the diet was restricted to carbohydrates.

S. Salaskin and J. Zuleski[8] report experiments showing that in dogs in which was allowed a communication of the portal veins with the vena cava, symptoms of ammonia and carbonic acid poisoning appeared, apparently as a result of the relative inactivity of the liver. Complete extirpation of the liver leads to increase in the general content of acid in the body, as is shown by the acid increase in the urine.

Two practical conclusions may be drawn from these data. 1. The fact, to which it would seem unnecessary to call attention but for the reason that it appears to have been somewhat overlooked, that the normal blood pressure in the portal vein is low; that when it is suddenly raised it is apt to be followed by symptoms of toxemia, and that these symptoms may be promptly relieved by purgation. 2. The important conclusion that, when the vascular changes and the raised portal blood pressure that permit the passage of the portal blood into the systemic vein are brought about gradually, the subject is better able to resist the toxemia, becoming, as it were, immunized to the offending portal blood, hence symptoms are less striking, and with proper care as to diet and purgatives may be practically overcome.

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ROENTGEN RAYS IN THE TREATMENT OF DISEASES OF THE SKIN.

A REVIEW OF RECENT LITERATURE AND A PERSONAL EXPERIENCE.*

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CHICAGO.

A little over a year ago I reviewed the literature of the use of Roentgen rays in the treatment of diseases of the skin.[1] The subject is of active interest and there have been frequent contributions to it during the last year, so that I trust I am warranted in bringing the review down to the present time and adding to this a brief account of my own experience. In general it may be said that the experience of the last year has been strongly confirmatory of previously made claims for the value of the method. Recent reports have not established new fields of usefulness for the method, but they have put us in a position to appreciate more accurately the indications for it and to form a better opinion of its value.

An analysis of clinical reports and of the reports of microscopical studies of tissues affected by *x*-rays indicates broadly that this method of treatment may be of use in the following conditions: 1, in conditions where it is desired to produce an atrophy or partial atrophy of some of the appendages of the skin, as in hypertrichosis; 2, in mycotic diseases, such as tinea tonsurans, favus and sycosis; 3, in chronic inflammatory affections, such as indurated patches of eczema and lupus erythematosus, where the purpose is to stimulate the tissues and cause absorption of inflammatory products; 4, in certain specific affections, such as lupus and epithelioma, where the purpose is to cause the destruction of tissues of low vitality.

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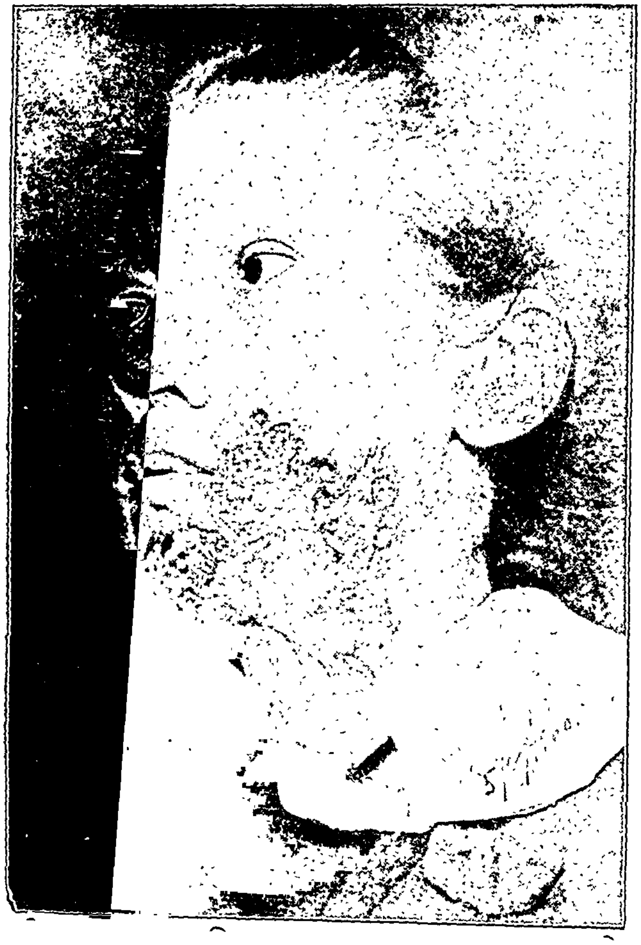
* Read before the American Dermatological Association, May 31, 1901.

[1] Journal of Cutaneous and Genito-Urinary Diseases, July, 1900.

REMOVAL OF HAIR.

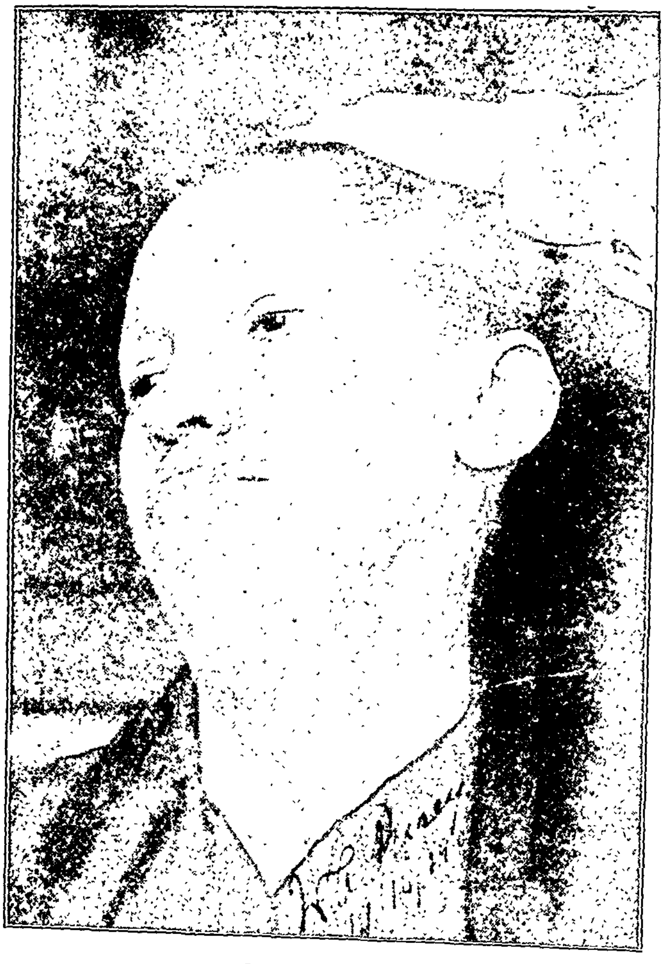
As Oudin Berthelemy and Darier have shown, the effect of *x*-rays upon the epithelial structures of the skin is to increase the vitality of the least differentiated skin elements, while the differentiated elements—hair, nails and glands—undergo retrogressive changes and atrophy. It is this effect of *x*-rays that is useful for the removal of hair. Freund was the first to suggest the use of this agent for this purpose, and he and Schiff have perhaps done more in this direction than anyone else. I had the opportunity of investigating their work during the summer of 1899 in Vienna; I found that observers, who had seen their work from the beginning, had no doubt that they were able to produce permanent alopecia by their method of using *x*-rays. Their claims in this direction are being confirmed by many other observers. One of the most interesting cases of this sort was reported by Neville Wood; in this case a profuse growth of down and large hairs was removed from the chin by the use of *x*-rays, and there was no recurrence eight months after the cessation of the treatment. Startin has reported four cases in which he has successfully used this method for the removal of superfluous hairs with results that were permanent after several months. Jutassy has reported similar cases.



Case 1.—Fig. 1.

My own experience in the treatment of hypertrichosis by this method now extends over about a year. I have 9 cases in which treatment began not less than four months ago; 2 of these were compelled to give up treatment before results could have been expected. In the 7 other cases partial or complete alopecia has been produced. In only 1 case has the result failed to satisfy the patient. The following 2 cases have been longest under treatment and show the most striking results:

Case 1.—Miss A., brunette, age 22, with a profuse growth of coarse black hairs from half an inch to an inch and a half long on chin and upper lip. The growth was not less than that found on many men of the same age and was very disfiguring. After twenty-seven exposures, which were given at the rate of five or six per week, some erythema and pigmentation developed and treatment was discontinued for a month, during which time these manifestations entirely disappeared and many hairs came out. Sittings were renewed until twenty-five more were given, when erythema developed and treatment was discontinued for three weeks. During this intermission there was continuous falling of the hairs. By the end of three weeks almost all the hairs on the chin had come out and a great many on the upper lip. Sittings were renewed after three weeks and twenty-four sittings were given, when considerable erythema developed. Upon the occurrence of this third reaction all of the remaining hairs came out from the lower part of the face and only a few fine hairs were left on the upper lip. Three months after the stopping of exposures the patient came back with the recurrence of a very few hairs; these were small and not conspicuous, and after nine sittings they all fell out. The last sitting was given March 28 and up to the present there has been no recurrence. The entire improvement is remarkable; the skin is white, smooth and perfectly normal in appearance, and aside from the absence of hairs her complexion is unquestionably better than it was before treatment began.



Case 1.—Fig. 2.

CASE 2.—Miss B., age 26, with an abundant growth of brown, coarse hairs, the longest over an inch long, on lower part of face and upper lip, greatly disfiguring an otherwise attractive face. The course in this case was very similar to that in the preceding, except that results were produced with less difficulty, and only slight erythema was ever produced. Sixty-seven sittings in all were required to cause entire removal of the hairs, and there is no recurrence up to the present. The patient's skin is in good condition, and shows similar improvement in appearance to that observed in the first case.

These two are, with one exception, the most exaggerated cases of hypertrichosis that I have treated. In four of my cases the course has been somewhat different from that outlined above. In these, there has not been a rapid fall of hairs at one time, but they have gradually fallen out week after week until the number remaining is very few, without complete alopecia. While the results in these cases are not so striking to report, they have been equally as satisfactory to the patients. The falling of the hairs has been very like a rapidly progressing alopecia from natural causes. In two cases, sisters, the result has been attained with more difficulty, owing to the appearance of a slight dermatitis, which was very slow to disappear. In one of these cases the erythema and pigmentation lasted four months. It was, however, only slight and not sufficient to cause the patient any annoyance. During this time there was constant but gradual thinning of the hairs, so that the patient to-day, while still showing a good many lanugo hairs, has no coarse or long hairs left.

I have found that it takes a greater number of sittings to cause outfall of the hairs than Schiff and Freund and other observers report, but this may be due to the fact that I have pursued the treatment with great caution. The time required for the removal of the hairs the first time has varied, in my cases, from twenty to sixty-six sittings; the removal of recurrent hairs has required from five to fifteen sittings. According to the observations of Schiff and Freund, recurrence of a few hairs must be expected at intervals of from four weeks to several months, until a year and a half has passed; these hairs must be removed as they recur. In none of my cases has sufficient time elapsed to justify an opinion as to the permanency of the result, but in the length of time that the hairs remain away after their removal and the ease with which the recurrent hairs are removed, my experience confirms the claims of Schiff and Freund.

In no case, except the first one detailed above, has any considerable dermatitis developed. The cases usually show slight erythema or pigmentation after three or four weeks of daily sittings, and then in a few days the hairs begin to come out. If treatment is stopped at the first appearance of these symptoms the erythema rapidly disappears; the pigmentation is somewhat slower to disappear. My experience in treating hypertrichosis indicates, contrary to the statements of some observers, that with all the factors that determine the strength of the light the same individuals vary considerably in their reaction to the rays. I have been able to cause falling of the hair in some cases by as few as twenty exposures; in another case it required sixty-six exposures. In some cases erythema appears without pigmentation; in others erythema and pigmentation appear together, and in different cases the relative degree of erythema and pigmentation varies. In a recent case the course of treatment has been complicated by the early appearance of very considerable pigmentation, which has proved very slow to disappear. In my experience the reaction of different individuals to *x*-rays is very similar to their reaction to sunlight. Skins which burn rather than tan under sunlight develop erythema rather than pigmentation under exposures to *x*-rays, and skins which tan without burning show greater pigmentation under *x*-rays. In some cases the hairs fall rapidly upon the occurrence of erythema or pigmentation; in others they come out slowly for weeks after the production of these symptoms and the stopping of treatment.

It is not to be lost sight of that atrophy of the other appendages of the skin occurs to a greater or less degree along with the atrophy of the hair follicles, and it is conceivable that this might produce an injurious effect upon the skin. In the cases which I have treated the action of the rays upon the skin has caused distinct improvement in its appearance. In all of my cases, after the disappearance of the erythema and pigmentation, the skin of the parts treated has been left smooth and soft, of good color and healthy appearance. Some of these cases have had slight acne and following exposures the acne and the commedones have disappeared. During the existence of the erythema the affected areas have shown increased sensitiveness to local irritation, particularly to exposure to cold winds, but after the disappearance of the erythema the skin has shown no lowered resistance. The increased sensitiveness to cold has disappeared and the areas treated have shown themselves to be quite as tolerant of local irritants as other parts.

ACNE.

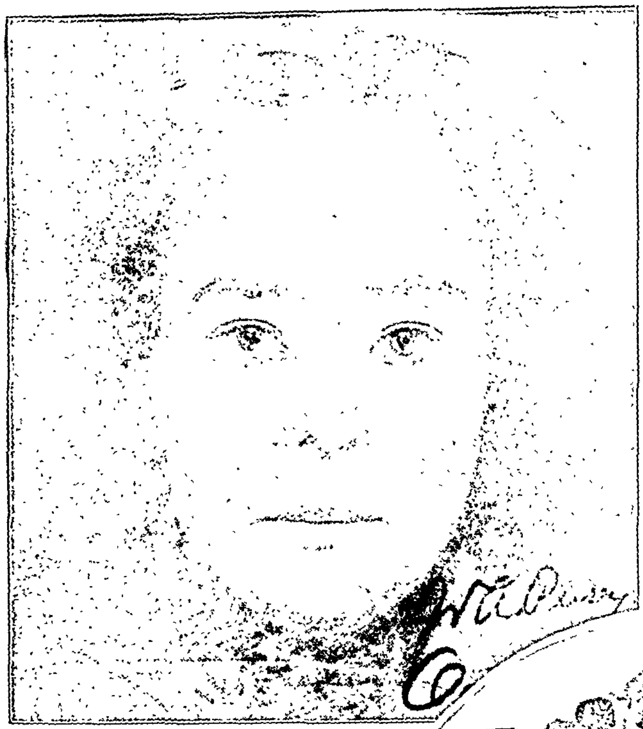
The fact that the sebaceous and sweat glands are similarly, though to a less degree than the hair follicles, affected by the *x*-rays suggests the possibility of the use of them for the treatment of disorders of these glands. and a number of favorable reports of the treatment of acne by this method have been published. Upon theoretical grounds there is good reason to believe that this method has a field of usefulness in treating acne. There is another property of the rays, in addition to the property of causing atrophy of the appendages of the skin, that probably comes into play in treating acne, and that is the property of inhibiting the formation of pus. This property of the rays will be referred to again in considering Zechmeister's case of sycosis parasitica treated by this method. Whether the rays have any bactericidal properties or not—a point which seems still open to question—there can be no doubt as to the inhibitory influence of *x*-rays upon the formation of pus in the skin.

HYPERIDROSIS.

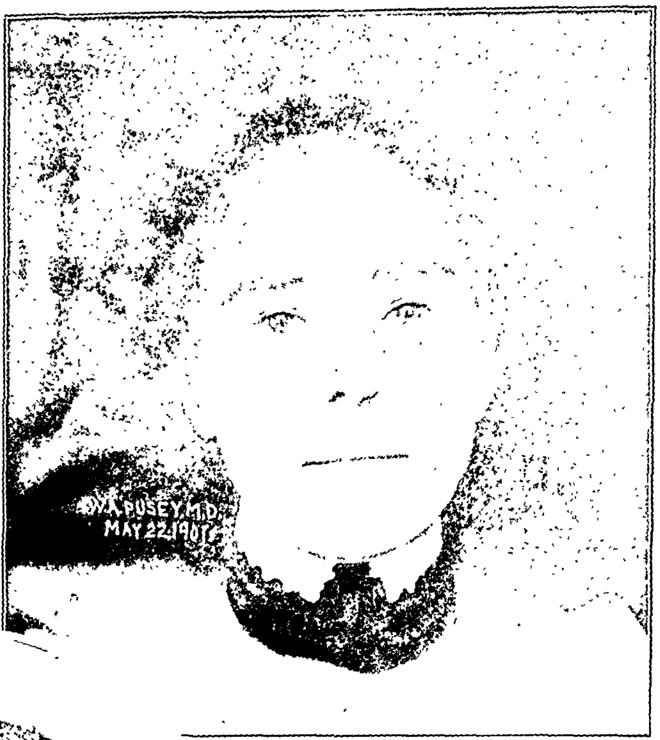
The effects of *x*-rays are perhaps less upon the sweat glands than upon either the hair follicles or the sebaceous glands. There seems to be, however, some theoretical ground for believing that the method may be useful in local forms of hyperidrosis. So far as I know, no one has suggested the use of the rays in these cases. I have not tried the experiment myself, but believe there is sufficient ground to warrant its trial in intractable cases of hyperidrosis, as, for example, of the axillæ or of the feet.

TINEA TONSURANS AND FAVUS.

In tinea tonsurans and favus the use of *x*-rays has been highly recommended by Schiff and Freund, who report rapid cures of these conditions by this method. I know of no reports upon the subject within the year.



Case 2.—Fig. 3.



Case 2.—Fig. 4.

Case 4.—Fig. 5.

Case 4.—Fig. 7.

SYCOSIS.

The use of *x*-rays in the treatment of sycosis was first suggested by Schiff and Freund. I had the opportunity of observing some of their cases in Vienna two years ago, and I believe that in cases of deep-seated parasitic sycosis there is no other method of treatment that compares with this. Other observers are confirming the results obtained by Schiff and Freund in the treatment of this disease. Gassman and Schenkel have reported, to use their own words, "an unquestionably favorable result" in a case of non-parasitic sycosis. Zechmeister has given a careful report of a successful case treated by this method. This was a case of deep-seated parasitic sycosis of two years' standing in spite of persistent treatment in which the disease disappeared entirely within a month under *x*-ray exposures. Without the use of antiseptics the pustules rapidly dried up, and the subcutaneous abscesses disappeared without incision. There can be no question that in the use of *x*-rays we have a most valuable method of treating this very intractable affection.

LUPUS ERYTHEMATOSUS.

The utilization of this method in treating chronic inflammatory affections of the skin has been confined chiefly to the treatment of eczema and lupus erythematosus. Schiff, Jutassy, and Hall Edwards have reported cases of lupus erythematosus treated by this method. Improvement and even cures are reported, but in a disease so uncertain in its course as lupus erythematosus, conclusions as to the value of any method of treatment must be very carefully drawn. The efficacy of this method in the treatment of this condition requires for its determination a much larger experience. It is recommended by theoretical considerations.

ECZEMA.

Favorable results in the treatment of eczema have been reported by a number of observers, among them, Jutassy, Holland, Mackay and Hahn and Albers-Schoenberg. Practically the same may be said of the treatment of eczema by *x*-rays as was said of the treatment of lupus erythematosus. I see no reason to change the opinion which I ventured a year ago, viz., that the cases of eczema, in which this method of treatment seems to have a field of usefulness, are those with very intractable, circumscribed patches of eczema, in which there is necessity for marked stimulation of the skin in order to get absorption of the inflammatory products.

LUPUS VULGARIS.

The reports of last year upon the treatment of lupus vulgaris with *x*-rays strongly confirm the previous claims for its value. Cases have been reported by Jutassy (1 case), Gassman and Schenkel (4 cases), Hall Edwards (2 cases), Scholefield (1 case), Knox (1 case), and 1 case by the writer. Knox's is the second case reported in the United States, the first case having been reported by Jones, San Francisco, two years ago. My first case was reported two weeks later than Knox's. There can be no question as to the accuracy of the diagnosis in all of these cases. The length of time that they have been well varies from a few weeks to two and a half years. Among Gassman and Schenkel's 4 cases, 2 cases had relapses, 1 at six, the other at seven months after stopping exposures, but that so mischievous a disease as lupus should recur in rare instances after any method of treatment is hardly surprising.

I have treated three cases of lupus vulgaris by this method. The condition of Case 1, at the beginning and at the end of treatment, is shown in the accompanying portraits (Figs. 1 and 2).[2] The last exposure given to this patient was on Jan. 12, 1901. The patient remains well at the present time with perfectly healthy scars. I will exhibit her at our clinical meeting.

CASE 2.—Girl, age 18, referred to me by Dr. A. J. Ochsner, with a diagnosis of lupus, for treatment with *x*-rays. It was a typical lupus of the nose involving tip, alæ and septum. The disease began four years ago on the tip of the nose and gradually spread to its present extent in spite of persistent treatment. The patient had been under Dr. Ochsner's treatment for two and a half months and during this time the condition had greatly improved. The photograph herewith presented (Fig. 3) shows very well the condition at the time she came under my care. The entire tip of the nose and alæ were a mass of reddish-brown, soft, friable, apple-jelly, lupous tissue. The middle half of the upper lip was covered by similar tissue, some of which was ulcerating, and scarred. The disease had also involved the mucous membrane of the nasal orifices and septum. Exposures were begun on October 1, and were given almost daily until December 20.

With the exception of a reddening, sharply confined to the lupous area, which occurred after thirty sittings, there was no change in the condition until the middle of December, when considerable redness developed in the lupous tissue and slight redness in the surrounding healthy part which had been exposed. As the lesions had proven quite intractable, exposures were continued until ten more were given. On December 20, after sixty-four exposures, treatment was stopped on account of dermatitis and tenderness of the exposed surfaces; on December 28, without further exposures, a not very tense bulla, the size of a thumb-nail, developed on the tip of the nose, where the effect of the light had been greatest. This was accompanied by tenderness and slight pain. Within a week most of the dermatitis subsided, the bulla ruptured, and at its site there showed a very superficial ulceration. This bled easily, was quite painless after a few days, and was covered with a superficial necrotic membrane. Its borders rapidly contracted, and on January 20 it had entirely healed. With the healing of this surface almost all traces of lupus disappeared. There was left only a small suspicious area, the size of a little finger-nail, on the right ala; to remove this, exposures were given, at from one to two day intervals, during February and March. After thirty sittings this spot on the ala of the nose became red and swollen, and these manifestations were quickly followed by a very remarkable softening of the lesion, so that it felt as soft as a flaccid bulla, without, however, any suspicion of a separation of the epidermis occurring. This redness and softening was quickly followed by the disappearance of the last suspicious area. From the beginning of treatment up to the time of the disappearance of the last lesion, March 16, 1901, she had ninety-five sittings, extending over a period of six months. Since the disappearance of the last lesion she has had irregular exposures simply as a precaution. She has been for two months free from any evidence of the disease. The condition at present is shown in the accompanying photograph (Fig. 4), and I will exhibit the patient at our clinical meeting.

The results, from a cosmetic standpoint, is, I believe, as perfect as can possibly be expected. There is some diminution in the size of the nose, but aside from this there is no deformity. There is entire absence of scarring in all of the areas treated by this method; the only scars are those on the upper lip resulting from ulcers which healed before this treatment was begun. The skin is soft, pliable and natural in appearance. I do not believe that as good a result as this is possible under any other method of treatment, except Finsen's. The only local treatment that this patient had was boric acid vaselin applied to the tip of the nose during the time it was inflamed by *x*-rays. She had no internal treatment whatever.

CASE 3.—Woman, age 41; occupation, trained nurse, with lupus of the face of twenty-five years' duration. This is a very extensive lupus, which has had vigorous treatment for many years. Two and a half years ago, an attempt was made at extirpation of the disease surgically, with restoration of the face by plastic operations. The disease promptly recurred. This patient has been under my care for six months. The transplanted tissue has proven very irritable to x-rays, so that it has been impossible to give her vigorous treatment.

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[2] This case was reported in THE JOURNAL A. M. A., Dec. 8, 1900, and the reader is referred thereto for a full history of the case.

There is considerable improvement in the condition, but the disease is by no means cured, and I present the case only that my report may be complete.

CARCINOMA.

The most interesting development of the last year in the use of x-rays has been in the treatment of cutaneous carcinoma. There are reports of favorable results previously, but the accumulation of evidence in favor of the treatment by x-rays has taken place within the last year. Cases have been reported by Stenbeck (1 case), Johnson and Merrill (6 cases), Sequeira, London Hospital (12 cases), Smith (1 case). In practically all of these cases the diagnosis is beyond question. In most of them confirmatory, histological diagnosis was made. The results are not in all cases cures, but in all cases there is unmistakable evidence of the beneficial influence of the rays. Stenbeck's case is a cure of a rodent ulcer of the nose. Everett Smith's case is similar. Of Johnson and Merrill's cases, three epitheliomas of the nose are entirely cured, as far as can be determined in the time that has elapsed. One epithelioma was not entirely cured, but showed great improvement. One recurrent carcinoma of the breast had, after four weeks, shown an improvement in the patient's health and disappearance of pain. One case stopped treatment after a very few exposures. Of Sequeira's twelve cases, three cases were apparently cured; these cases have been demonstrated before the London Dermatological Society. The other nine cases were still under treatment and showed more or less improvement, according to the length of time treated. Williams, Boston, has reported favorable results in epitheliomas treated by this method, including a report of one case which is apparently cured.

I have treated one epithelioma by this method:

Case 4.—Mrs. C., age 68, with the following history, most of which is taken from the records of St. Luke's Hospital. About twenty years ago a wart appeared in the right supraclavicular space and gradually increased in size. Three years after its appearance the surface broke down and an ulcer developed, which, after two years' duration, was excised by a well-known Chicago surgeon.

The disease recurred in the upper angle of the scar and enlarged until 1894, when she came to St. Luke's Hospital. It was then the most extensive epithelioma I have ever seen, covering almost the entire upper third of the back, and extending over the right shoulder to the clavicle. I fortunately photographed her at that time.

During 1894-5 she was in St. Luke's Hospital, in the services of Drs. John E. Owen and L. L. McArthur, where vigorous attempts were made to extirpate the diseased tissue. A large part of the tumor was destroyed and extensive grafts were made, so that the diseased area over the back was converted into scar tissue, which has remained healthy until the present. The area over the right shoulder, from the spine of the scapula behind, to a point below the clavicle in front, an area covering the entire upper surface of the shoulder, was not cured.

From that time until this winter she has been more or less constantly an out-patient at St. Luke's and for two years past it has not been thought feasible to make any further attempt at extirpation of the growth. The extent of the growth, at the time she presented herself for treatment with x-rays, is shown in the photograph (Fig. 5) presented herewith. As shown in the photograph, the disease involved the greater part of the area over the right shoulder. The largest lesion was situated at the juncture of the neck and shoulder, and consisted of three confluent ulcers, forming in all an ulcer with a diameter of about three inches. This was a typical epitheliomatous ulcer with elevated, rolled, hard, pearly borders. In addition, there were perhaps twenty other epitheliomatous ulcers, varying in size from a finger-nail to a small pea, located around and posterior to the large ulcer. Extending down over the front of the shoulder was a triangular space with the apex below the clavicle, which contained numerous small epitheliomas. Some of these were ulcerating, but most of them were intact nodules.

All of the tissue of the affected area was inflamed and indurated. There was no evidence of involvement of contiguous glands or of the underlying tissue. There was free discharge from the ulcers and for many years the patient had suffered severe pain. Tissue for examination was excised from the border of the large ulcer and sections of this are presented to-day. [Only one illustration is given here, namely, Fig. 6, the central photomicrograph of the insert.] The tissue presents the typical histological picture of superficial epithelioma (Fig. 6). The tissue has also been examined for blastomycetes, which were absent.

Through the courtesy of Dr. Porter, who was an interne at St. Luke's during her residence there, I am able to show a section that was made seven years ago. This section also shows characteristic epithelioma.

The patient was put under exposures to x-rays on Jan. 15, 1901, and had almost daily sittings until February 14, eighteen in all. Within a week the discharge from the ulcers almost entirely ceased, and the patient volunteered the statement that her shoulder was free from pain and that she was able to sleep comfortably for the first time in many years. Since this first week there has been practically no discharge from the ulcers, and almost no recurrence of pain. The disappearance of the discharge was the more interesting because before the patient came under treatment with x-rays she had been a regular attendant at St. Luke's Hospital out-patient department, where her shoulder had been dressed as often as necessary.

On February 4 the ulcers were decreasing rapidly in size, and, what was more significant, the rolled edges were shrinking. On that date, the patient was hurt by a fall and was not able to appear for further exposures until March 13. In the interval she was in the Charity Hospital, where, at my request, the physicians kindly saw that no change in the local treatment was made from my application of boric acid vaselin.

She returned for treatment on March 13, and from March 13 to May 4 she had twenty sittings, varying from daily sittings to sittings at intervals of from four to five days. By April 5, the evidences of epithelioma were limited to a small ulcer not larger than a little finger-nail at the site of the previous large ulcer, and to two rows of very characteristic nodules in the supraclavicular space.

Up to this time the exposures had always been made so that the greatest intensity of light fell on the shoulder, and the lesions over the clavicle, therefore, had received less of the rays. After April 5 the upper surface of the shoulder, which had been getting exposures of fifteen minutes, was given exposures of five minutes, and the lesions over the clavicle were given direct exposure of fifteen minutes. Within five days after beginning these exposures over the nodules in the supraclavicular space a very remarkable change was noticed in them. They began to shrink and to disappear rapidly.

By April 16, that is, after ten direct exposures of fifteen minutes each, these nodules had entirely disappeared. They were absorbed and disappeared, leaving no trace of their existence, without dermatitis or any breaking-down occurring. Sittings were discontinued on April 16, as the shoulder showed slight dermatitis.

By April 29 this irritation had entirely disappeared. Between April 29 and May 8 the small ulcer on the upper surface of the shoulder, the last trace of epithelioma, entirely healed. Her condition at present, and since May 6, is shown by the photograph (Fig. 7).[3]

I particularly call attention to the character of the scars. They are called scars for lack of a better term, but there is hardly any evidence of scar tissue. The skin is smooth and soft without contractures and shows practically no trace of the previous ulcers. Whether this case is a cure or not time can only determine. There is no evidence of epithelioma remaining and, as far as can be told in the length of time that has elapsed, the case is cured. Regardless of the possibility of recurrence, I believe the result may still be called remarkable.

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[3] All the patients whose photographs are shown were presented at the clinical meeting of the American Dermatological Association. All of them remain well at present, Sept. 1.

The only local treatment which the patient received while undergoing this treatment was the application of a cloth covered with vaselin containing one dram of boric acid to the ounce, and the occasional wiping of the surface with cotton sponges wrung out of a bichlorid solution. There has been no care exercised to keep the surface free from contamination with pus organisms and in spite of conditions most favorable to infection the ulcers remained clean and almost entirely free from discharge. The only internal medication which the patient had was compound syrup of hypophosphites during the month of April, when she was much depressed from chronic bronchitis.

I have also treated, by this method, a recurrent carcinoma of the breast. This case was only undertaken after further surgical intervention had been refused by her surgeon, a man of well-known standing. This patient remained under treatment four weeks. There was, in her opinion, a lessening of the pain and she certainly improved in her general health, but there was no perceptible effect upon the tumor, and, as the patient was compelled to be away from her family in order to have the treatment, at my suggestion, the treatment was not carried further. It seems hardly to be expected that the method should be of service in inoperable carcinomas of the breast, with their extensive metastases, nevertheless the method deserves a trial even in these desperate cases. In this connection it is not to be forgotten that Williams has reported a case of epithelioma of the lower lip, treated with *x*-rays, in which the enlarged gland, under the inferior maxilla, disappeared after the lip was healed.

Dr. T. A. Davis has suggested to me the use of *x*-ray exposures after removal of carcinomas of the breast as a means of preventing recurrence of the disease. With the facts before us as to the destructive influence of *x*-rays upon carcinomatous tissue, this ingenious suggestion is worthy of trial, not only after removal of carcinomas of the breast, but also after removal of carcinomas in other superficial locations.

In my cases I have followed the technique suggested by Schiff and Freund, and it meets all of the requirements of accuracy and safety. This technique has been described in my previous article. Of course, the application of *x*-rays, whether for the removal of hair or for other conditions, must be made with great caution. To this end it is necessary that all of the factors involved in producing the light be definite and that there be repeated exposures to a weak light, the effects of which may be controlled, rather than the use of a strong light for a few exposures. The treatment should be interrupted at the first indication of reaction. The work should not be undertaken with static machines or with the ordinary apparatus used for diagnostic purposes.

The question of the effects produced upon tissue by *x*-rays, and of the factors in the rays which produce these effects, I considered in my previous article and I shall not take time to go into a full consideration of these again. I will venture the opinion that the reasons are constantly becoming stronger for believing that the effects of *x*-rays are due to the peculiar *stimulation* of the tissues which they cause, and not to any strong bactericidal effects in the rays themselves. As to the active factor in the rays, I repeat, with increasing assurance, the opinion offered a year ago, that the essential factor is something in the rays themselves and not, as has been suggested, some incident of their production, like ozone, or brush discharges, or induced electrical currents in the tissues, or particles of platinum carried off from the anticathode. As Prof. Elihu Thompson expresses it, in discussing some experiments on the point, "There is only the supposition left that the effect was produced by Roentgen rays or something that comes with the rays." The lesser degrees of *x*-ray burns resemble sunburns more closely than any other pathological process, and there seems to be no good reason for not believing that the effects of *x*-rays on the tissues are due to the actinic rays of the *x*-rays, just as sunburn is due to the actinic rays of sunlight. That certain of the *x*-rays are strikingly similar in their actinic properties to the rays of light at the violet end of the spectrum is shown by their similar effect on photographic plates. And it is no violence to the reason to suppose that the same actinic properties of the *x*-rays that cause rearrangement of molecules and the formation of new salts on photographic plates can exercise a similar power on the molecular arrangement of tissue cells and influence their metabolism. I am more fully convinced than ever that the active rays among the *x*-rays are identical, or at least so similar in all of their properties as to be practically identical, with the rays at and beyond the violet end of the spectrum. If this is true this method of treatment is identical in principle with that of Finsen, and I am willing to record myself as holding the opinion that such is the case.

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CONGENITAL CYSTIC KIDNEY.*

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In accepting the opportunity kindly offered me by the Chairman of this Section to present the clinical history of a case of unilateral cystic kidney in a child of 4 months and 14 days, I am actuated by the hope that the rarity of the condition, at least as far as I am able to determine, may elicit a degree of interest which would otherwise not be merited by the report.

The salient points in the case, briefly stated, are the following: The child, Freda W., female, born July 13, was the second child of German-American parents; from the time of birth until 2 or 3 days prior to securing this history she was seemingly possessed of perfect health. November 27, Dr. Stidworthy was called to see the child on account of vomiting and constipation, no evacuation of the bowels having occurred for nearly 48 hours.

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* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Diseases of Children, and approved for publication by the Executive Committee of the Section: Drs. H. E. Tuley, Edwin Rosenthal and Samuel W. Kelley.

On the evening of Nov. 29, 1900, I was requested by Dr. Stidworthy to see the child with him, and found her to be well nourished, presenting all the appearances of having been possessed of a normal degree of health. The rectal temperature was 101 4/5, pulse 164, respiration hurried and embarrassed. It had been vomiting some, and no movements of the bowels had occurred for nearly 4 days, despite the fact that laxatives in generous doses had been administered repeatedly. The mother thought that the diaper had been wet about as usual.

Examination of the child's abdomen showed that it was immensely, and apparently uniformly, distended, the integument tightly stretched and glistening; the umbilicus protruded and was surrounded by an area of active hyperemia, as if the structures were the seat of an infective inflammation. This area was about two inches in diameter.

Palpation revealed the presence of a circumscribed collection of liquid in the abdomen, seemingly confined mostly to the right side. Percussion showed dulness over the whole abdominal area, except in the left hypochondriac, lumbar, and inguinal regions, backwards from about midway between the mammary and axillary lines.

I was under the impression that I had to deal with an accumulation of liquid within the remains of an imperfectly occluded urachus or vitello-intestinal duct, being inclined to the former opinion. The febrile condition present, as well as the area of inflammation about the umbilicus, led me to suspect the presence of an infection from some source. It did not seem that the intra-abdominal tension was sufficient to cause the inflammation mentioned. In order to determine the character of the fluid, I removed a small quantity by aspiration, through a point about one and one-half inches below the umbilicus, in the middle line. It was found to be a liquid of a light amber color. It occurred to me that possibly the vesical end of the urachus remained patent, and that this fluid was urine. I therefore emptied the bladder by means of a grooved director, not having on hand a catheter which could be passed.

The urine, as well as the liquid removed by aspiration, were then tested for albumin. The urine was found to contain none, while the aspirated liquid nearly solidified into a starchy-looking or colloid material on boiling, with nothing to indicate that the liquid was the product of renal excretion. It was now apparent that there was present one of the following conditions: An ovarian cyst; cystic kidney; cyst of the liver or pancreas; distention cyst of the gall-bladder, or distention of lesser peritoneal cavity, through closure of foramen of Winslow.

It was impossible to determine what intra-abdominal structure was giving rise to the cyst, yet I inclined to the belief that it had its origin from the kidney or ovary. The child's condition being precarious, and relief being necessary, it was decided to do a celiotomy and remove the cyst, if possible. Accordingly, the child was taken to the St. Joseph Mercy Hospital the following day, when, under chloroform anesthesia, the above views were carried out. The primary incision through the abdominal parieties was about one and one-half inches in length, and in the middle line, the upper end of the wound being about half an inch below the umbilicus. It was subsequently extended upward for nearly another inch. The primary opening in the abdominal parieties exposed the cyst wall, which was found to be adherent to the abdominal wall over an area of probably three or four inches in diameter about the umbilicus and to the right of it. This adhesion was separated, however, without much difficulty, but the cyst filled the abdominal cavity so thoroughly that its origin could not be determined.

The cyst was now opened between the grasp of two pair of hemostat forceps and partially emptied of its contents. Exploration of its surroundings showed its origin to be from the upper part of the abdominal cavity on the right side, and my diagnosis was that of a cystic kidney. The uterus and ovaries could be felt in their normal position. I re-introduced my finger into the sac to determine its exact point of attachment. The expanded portion of the kidney structure proper was found to lie under the liver, and its margins came so far forward that it quite covered the liver; I was, for a moment, in doubt as to the correctness of my diagnosis, fearing that I might be dealing with a cyst of the liver or a distended gall-bladder, and it was only after I had sought the liver and determined its normality that I was satisfied.

Thus, even after the abdomen was opened, the diagnosis of a cystic kidney was only problematic, and it was only after the other structures, from which the cyst might have arisen, were examined and found to be normal that the diagnosis could be verified.

As a detailed description of the steps in the operation are probably of little interest we will omit them, only stating that the time of the operation was fourteen minutes and that the child made a rapid recovery without any untoward symptoms and has since seemingly been enjoying the best of health.

Medical literature acquaints us with the fact that prenatal development of cystic kidney, while rare, is not an unknown condition. It at times reaches a degree of development which precludes a normal birth, evisceration having in some instances been found necessary before delivery could be accomplished. A large per cent. of children who survive birth are presumed to succumb early to the effects of pressure, as in the embarrassment of respiration induced by the limitation of diaphragmatic movement, or in the disturbance of the functions of the intra-abdominal viscera; while toxemia, resulting from inadequate renal function, is another potent factor in the early demise of these patients.

In cases where the size of the affected organ or organs, or the limitation of functionable renal structure is not extreme, the condition may not be incompatible with life, and it is believed that a small per cent. of such patients may reach adult years, or even old age. That is, providing that the condition remains latent and no intercurrent malady leads to an overworking of the remaining renal parenchyma.

It would appear that, while congenital cystic kidney may involve one organ, yet it is found to involve both organs in most instances, and associated with the condition there not infrequently may exist other malformations, namely, a horseshoe kidney or abnormally placed kidneys, or kidneys without pelves or ureters—hydrocephalus and hydrencephalus also existing. Cysts of the liver at times may co-exist. Instances are recorded of a mother having successively or interruptedly given birth to several children with cystic kidney.

Cystic kidney has had its cause ascribed to various factors by different investigators. Dr. Hektoen[1] concludes, after an exhaustive study of the subject, that the theories divide themselves into the following three sets: 1, retention; 2, cyst-adenomatous, and 3, teratological.

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[1] Chicago Med. Record, September, 1892.

1. The theory of retention and dilatation, resulting in the formation of cysts, is based upon the study of a number of cases of cystic kidney in the old as well as in the newborn, in which there were actually demonstrated various causes of obstruction in the uriniferous tubules at the papillæ or elsewhere in their course. Mere mention of the various possible modes of obstruction suggested, but not demonstrated, will be enough; occlusion by the impaction of fibrinous casts, desquamated epithelium, blood, precipitated salts, etc. Virchow assumes a papillary atresia, or stenosis, due to a fetal inflammation, in order to explain the congenital cystic kidney. Complete obliteration, or absence of the pelvis, is mentioned by Thorn, Sutton, and others as capable of causing cystic kidney. Ewald, in briefly reviewing the literature on the etiology, states that many authors believe that chronic interstitial nephritis, with desquamation and impaction of epithelial cells or strangulation of the tubules by connective tissue, may cause cystic kidneys in some cases; the peculiarities, which would determine the instances in which total cystic degeneration and not merely small cortical cysts should take place, are not described.

2. The cyst-adenomatous theory is based upon the demonstration, in cases of cystic kidney, of the appearances characteristic of adenomata. In these cases the chronic interstitial changes are usually held to be secondary, although Sabourin concludes his study as follows: "Renal cysts in cirrhosis develop from tubules whose epithelium is reduced to an indifferent state; by fusion, cysts are formed, which merit the name of adenoma." Hommey, Lejars, Cornil et Brault, Brigidi, Sevin and Phillipson adopt the same view.

3. Theoretically, the kidney should be the organ of all others able to furnish instances of the teratoid origin of tumors from persistent embryonic rudiments, but few renal growths have been regarded from this point of view. S. G. Shattock concludes that the congenital cystic kidney is formed by a combination of the meso- and meta-nephros, the remnants of the Wolffian body developing into cysts scattered through the proper renal tissue; the tension upon the intertubular tissue by the enlarging cysts might cause the interstitial changes; the presence of urinary constituents in the cysts does not mean, according to Shattock, that they originate from the kidney proper, because the meso-nephros in the fishes and the amphibia perform the function of the permanent mammalian kidney. Bland Sutton adopts and advances this view enthusiastically. He says that the microscopical appearances of a congenital cystic kidney and of the meso-nephros at its fullest development, the sixth week, agree completely.

Dr. Hektoen's own conclusions are:

1. The common cystic kidney in the old is best explained as due to retention caused by a chronic interstitial inflammation of the pyramids, and the medullary rays especially, as well as of the labyrinthine structure of the cortex. The epithelial lining of the cysts is entirely passive and often absent. There is no epithelial proliferation and new cysts formation demonstrable. A congenital or adenomatous origin for the cysts can only be inferred and not demonstrated. The etiology of the chronic inflammation is obscure in many cases; in others it may be referred to an ascending pyelopapillitis from calculi or to the same causes that produce the ordinary chronic interstitial nephritis.

2. Cystic kidneys, presenting a proliferating epithelial lining, with evidences of new cyst formation by budding from the old cysts or from uriniferous tubules, are plainly instances of renal cyst-adenomata.

Reasoning by analogy from other organs in the body, occasionally the seat of cystic adenomata, it would be expected that this variety of cystic kidney would most frequently be unilateral.

3. Congenital cystic kidney, without any demonstrable cause for obstruction and urinary retention in the tubules and presenting the structure characteristic of the meso-nephros, as described by Shattock and Sutton, is most reasonably to be regarded as coming from misplaced meso-nephrotic remnants. To look upon all cystic kidneys as congenital cannot be considered proper in view of the instances cited of cysts developing directly as the result of compression of the tubules and the papillæ by fibrous tissue, and cystic adenoma of the kidney can occur at any time of life.

The etiology of the case which I have presented is in doubt, I having been unable to fix upon any definite factor for its production. However, I am of the opinion that its cause must have been an occluded ureter, or even an absence of it, for I have not been able to find it. If a ureter did exist and was subsequently occluded the cause and whether this condition developed prenatal or postnatal must remain an open question.

The points of interest which are presented by this case are the following:

1. It involved only one kidney, and the fact that it developed to such a degree without leading to serious disturbances till occasioned by its encroachment upon the gastro-intestinal tract, through pressure, was of interest. However, involvement of one kidney can not be considered remarkable if my conception of its production be correct, namely, an occlusion or absence of its ureter; for then it would be likely to involve but one kidney, and with one normal kidney the excretory functions of those structures were no doubt properly carried on by the healthy one, thus leaving the child's general condition normal, except for the disturbances from the pressure.

2. The difficulties in the way of arriving at anything but a problematic diagnosis prior to direct inspection of the growth, it seems to me, are quite insurmountable; and even inspection of the growth does not lead to a positive diagnosis, till all structures, from which a more or less similar condition might arise are examined as to their normality, and a diagnosis being thus arrived at by exclusion. An organ thus distended no longer possesses any recognizable characteristics of its former self.

3. The case is further illustrative of the capability of children to endure what may be considered capital operations, provided that precautions are exercised in reducing to a minimum the period of anesthesia and operation, as well as the loss of blood. As nearly as I am able to learn from records which I have, this is the youngest child that has survived a nephrectomy. Dr. Roswell Park,[2] some years ago, having done a nephrectomy for congenital cystic kidney upon a child aged 23 months, with resulting recovery. Up to that time this was the youngest child that had recovered. Since that time Rovsing[3] has operated upon a child 9 months old for congenital hydronephrosis, with recovery.

GONORRHEA IN BOYS.[*]

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Of late the number of cases of gonorrhea in boys has been so large in some quarters that it has attracted more than passing notice, both as to the cause of their occurrence and to their general behavior and treatment. Within the past two years, twenty-two cases have come under my supervision, in patients ranging in age from 18 months to 12 years.

For purposes of scientific accuracy, the secretions were stained by the Gram method, and examined for the Neisser gonococcus, and in each case, without a question of doubt, the specific germ was found. In addition to the evidence furnished by the microscope, the clinical symptoms were carefully noted, and, when combined with the microscopic testimony, left no room for doubt as to the true nature of the infection.

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[2] Surgery by Am. Authors, vol. i, p. 432.

[3] International Text-Book of Surgery, vol. ii, p. 596.

[*] Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Diseases of Children, and approved for publication by the Executive Committee of the Section: Drs. H. E. Tuley, Edwin Rosenthal and Samuel W. Kelley.

It is commonly maintained that the source of infection, in the majority of juvenile cases, can be traced to the using of soiled linen, or infected water-closet seats—and to infected catheters in hospital cases. A most careful inquiry into the prevailing social conditions, however, and the histories of the cases that have come under my observation, lead to the conclusion that there are strong reasons for assuming that in children, boys as well as girls, the usual mode of infection is responsible for the disease, in more cases than we are accustomed to believe. Especially is this true in districts where the poor are crowded together in tenement houses, where the children are alive to the enjoyments of sexual gratification at an extremely early age, and where the dark cellars and water-closets and the roofs offer splendid opportunities, first for experiment, later for enjoyment.

It is not at all uncommon to learn that boys and girls, who have not yet reached the age of puberty, indulge in sexual gratification. Contact with older children, who have had their curiosity satisfied by personal experience, stimulates the sexual appetite in these children of the tenement and so-called "red-light" districts, at an age when impressions are easily made and habits contracted. The result is an excessive desire for the gratification of their precociously developed appetite, which, as can be easily shown, is not difficult to satisfy.

In my study of this subject there have been observed three cases of gonorrheal urethritis, in boys aged respectively 4, 10 and 12 years, which were acquired in the usual manner, from girls ranging between 10 and 12 years of age. In each case, according to the story told by the victim, the girl made the first advances, and in one case, that of the 4-year-old boy, the act was consummated in the form of an assault, by a girl 12 years old, in which the child was threatened with injury unless he performed his part.

In about one-half of the cases, there was no history of infection in this manner, but the cause was traced to the child sleeping in the same bed with a parent, brother or sister, who were found to be suffering from gonorrhea. Here again the cramped quarters of the tenement dwellers, with their lack of proper sleeping accommodations and their promiscuous intermingling of the sexes, may be held responsible, in a large measure, for the causation of this disease in young boys.

Then there were a number of cases that were admittedly produced by acts of pederasty. This mode of sexual gratification, among these highly stimulated children, is not at all uncommon. The roofs and water-closets of tenement houses, in the spring and summer especially, offer public exhibitions of this kind, to those who are alive to the existence of the practice.

In districts where prostitutes live in tenement houses and mingle with young children, gonorrhea may develop in boys as the result of an attempt on the part of the prostitute to rid herself of the disease by cohabiting with a male "virgin." This practice is induced by a superstition brought to this country from some parts of Europe. It promises those suffering from gonorrhea, of either sex, who cohabit with a virgin of the opposite sex, that they will thereby rid themselves of the disease.

Whatever the cause of the infection may be, the period of incubation and the general character of the disease do not differ from these manifestations in the adult. In from four to seven—sometimes ten or twelve—days after the infection, the subjective symptoms, pain and burning sensations on micturition, frequent desire to micturate, and sometimes almost complete retention, manifest themselves. A day or two later the meatus becomes red, swollen and puffy, and presents the typical "angry" appearance that constitutes an almost positive landmark in making the diagnosis of gonorrheal urethritis. The discharge is usually profuse from the beginning, not differing in appearance or consistency from that seen in the adult.

The pain which some of these children suffer is often out of all proportion to the clinical picture presented; but this hypersensitiveness is often found to be coincident with the presence of a contracted meatus or a tight prepuce, which probably acts as a dam to the secretions and by preventing proper drainage of the urethral canal, causes retention, and a consequent increase in the inflammatory products. Other children, on the other hand, suffer very little pain, and would probably not be brought to the surgeon for treatment but for the presence of the redness and swelling at the meatus, and the discharge.

Right here the importance and great value of circumcision may be pointed out. The redundant foreskin very materially interferes with the cleansing of the parts, and helps to complicate the condition of urethritis *per se*, with the additional balanitis and gland infections that are so often also found in the uncircumcised adult. Every case of gonorrheal urethritis in uncircumcised children offers a most eloquent plea for the circumcision of all male infants, when the possibility of future gonorrheal infection is considered. Both as a prophylactic measure against infection of the urethra by retained secretions within the prepuce, and as an invaluable aid in the treatment of urethritis should it appear, the operation of circumcision in infants deserves a position in the routine management of male infants after childbirth, second only to the care of the eyes and of the umbilical cord.

When the disease has lasted several days complications similar to those in the adult may appear. Posterior urethritis, and even prostatitis and epididymitis, has occurred in these cases; and in one case, that of a child 19 months old, with a very small meatus, there was an almost total inability to pass the urine, which condition was relieved only by the introduction of a fine woven catheter.

If the prostate is involved it becomes swollen and highly sensitive, causing exquisite pain when attempts are made to move the bowels. The epididymis, when involved, is also swollen and exquisitely tender to the touch.

In general, it may be said that the disease presents the same symptoms and complications as are seen in the adult, and it is interesting to note that the duration of the disease, from four to six weeks, is also about the same as in the adult.

The prognosis, as to complete recovery, seems to be better than in the adult. In young boys, there does not seem to be that tendency toward the continuance of the disease in the chronic form, and strictures are not so likely to follow as in the adult. I have never seen rheumatism develop in these cases. Recovery is complete and the inflammation leaves slight, if any, traces behind it.

Under the subject of treatment, the question of prophylaxis must be considered. The occurrence of gonorrhea in boys and infants would be one of the rarest of diseases, if proper care were taken by the parents and associates of these children. There is a strong element of criminality present when young children are permitted to become infected with a disease that is acquired only through actual contact with the infected discharges, and in a well-regulated society there should be a severe penalty for that criminal negligence or viciousness that results in the production of gonorrhea in children. If parents, or relatives, or playmates are suffering from the disease in any of its forms, the most stringent precautions should be taken to prevent healthy children from contamination. The physician, especially when practicing among the poor, should see to it that healthy children are not permitted to sleep in the same bed with those who are suffering from gonorrhea. He should also take care that the discharges be destroyed before infecting others, and that, immediately on the appearance of any of the symptoms of an infection, the patient be warned of the dangers that lurk in the urethral discharge, and be instructed in the measures to be taken to prevent the infection of other members of the family.

The primary requisite for the proper treatment of the disease is cleanliness, even carried up to the surgical degree. The cleansing of the parts will not only aid in bringing about a cure, but will also prevent the occurrence of some of the painful complications that would otherwise follow. If the child has been circumcised, the problem of keeping the parts clean is not a difficult one. Warm water, applied at intervals of three or four hours during the day, will keep the meatus and the surrounding tissues clean. A solution of boric acid or a weak solution of bichlorid of mercury may also be used for this purpose. If the prepuce be present, great care must be used to remove the secretions by constant cleansing with any of the above mentioned solutions. If the prepuce be a tight one and not easily drawn back over the glans, the solution may be slowly injected, by means of a small glass syringe, between the prepuce and the glans. This must be done at frequent intervals in order that the accumulated secretions may be removed. The development of phimosis will also be averted, if due attention is paid to this subject.

For the urethritis itself, the medicinal treatment will largely depend upon the extent and character of the inflammation. If the anterior portion alone of the urethra be involved, the injection of a one-half per cent. solution of protargol, three times daily, retaining it about five minutes each time, will often prove wonderfully effective in stopping the pain and removing the discharge. In three of my cases, a complete cessation of the pain and the discharge followed the second injection of this solution.

Unfortunately, however, these excellent results do not follow in every case. In spite of this treatment, or perhaps because of it, the inflammation often extends to the posterior portion of the urethra, bringing with it all the symptoms of posterior urethritis. In conditions like this, the injections into the anterior urethra are not only useless, but sometimes positively harmful. Irrigation of the urethral tract, with a mild solution of potassium permanganate (1-6000) or of the Thiersch solution, will prove of decided benefit. This is best accomplished, either by the use of the catheter with the eye in the posterior portion of the urethra, or by the small glass syringe. With the latter, the fluid can be slowly and gently injected directly into the bladder, without causing pain or irritation. When the bladder is fairly well filled, the irrigating fluid is permitted to flow out and the process repeated. The injection of weak solutions of protargol—1 to 400—into the bladder in this manner will also prove of value in some cases.

For internal administration, the pure oil of wintergreen, in doses of 5 to 10 minims, in milk or water, three times daily, will be found valuable in some cases. In others, an alkaline mixture, containing potassium bicarbonate and tincture of hyoscyamus, will bring relief from the pain and tenesmus.

When complications arise, they must receive appropriate attention. Epididymitis is best treated by the application of guaiacol ointment, 10 per cent. strength. Hot poultices also bring relief in some cases. When the prostate is inflamed and extremely painful, rectal irrigations of hot water will bring grateful relief. At night, suppositories containing a small amount of morphin and belladonna may be employed to relieve the intense pain and tenesmus. The bowels must be kept open by the use of irrigations or laxatives, and rest in bed should be enforced.

A dressing should be applied to the meatus and so applied that it can not fall off or be removed by the patient. Small sized "gonorrhea bags" may be used with excellent effect, in the prevention of further contamination. It is needless to point out the importance of preventing an infection of the eyes from the urethral discharge. In children, moreover, who can not always be made to understand, especial pains should be taken to prevent this. Strict attention to cleanliness and the use of a "gonorrhea bag" will positively guard against the occurrence of eye inflammation.

187 Henry Street.

DISCUSSION.

Dr. Edwin Rosenthal, Philadelphia—I have seen gonorrhea in children so very frequently. With regard to the superstition of prostitutes that they can get rid of the disease by giving it to a virgin, I would say that this prevails very widely and often accounts for attacks of rape. At one time I saw a whole troop of boys who had contracted gonorrhea in this way, and I only checked it by hunting up the guilty prostitute, one "Rachel" by name. The mode of infection was various. The proof of the crime can be easily established by microscopic examination of the discharge, both from the guilty person and the one infected. Within the last twenty years there has grown up in the larger cities a sort of system of tenement houses in which two or more families live in one room, separated perhaps only by a chalk line. I am disposed to be a little skeptical regarding the dissemination of the disease by infection from dirty water-closets.

Dr. Clifton Scott, Des Moines—I do not think this is confined to the tenement houses. There is great need for widespread information among the very best classes of society. No one holds woman in higher respect than I, but it is a most pernicious doctrine which is promulgated in women's clubs, that men are naturally vicious and women are naturally pure, and that every prostitute is the victim of man's duplicity. The people at large should understand that there are vicious women as well as vicious men, who have been vicious from their youth up. I have seen a few of these cases, and I know that a number of them originate from servant girls who seduce boys left in their charge or allowed to sleep with them.

Dr. A. C. Cotton, Chicago—I believe this is a subject of unusual interest to those who are family advisers. The ignorance of the laity on these subjects, which are considered a little too delicate to discuss, is quite astonishing. I have been the city physician in Chicago for two terms of four years. One of the duties of that office is to look after the police stations, the bridewell, and, in fact, any one for whom the city assumes even temporary responsibility. In cases of rape and alleged assault the city physician is naturally the first one called in by the prosecuting attorney to see if there is any medical evidence. It is astonishing what a large number of cases of alleged assault on little girls there are. These cases rarely come to trial. I have been surprised at the large number of cases of gonorrhea among such little girls. As city physician I learned of one source of gonorrheal infection, i. e., the practice of men "playing" with the genitals of little girls, though not committing rape. This happens even in children so young that they do not know what is being done to them. I have had many cases to show that little boys go through the motions of copulating with the assistance of an older female. I recall a string of little girls coming to my clinic suffering from gonorrhea. A search of the records indicated that they all came from a certain locality, although these children represented quite a variety of nationalities. A week later my assistant brought to me a boy of 10 years who had been infecting these ten or twelve little girls.

Dr. J. C. Cook, Chicago—I was very glad to hear the paper, and yet it seemed to me to be lacking in scientific knowledge; for the time has arrived when we should know whether it is possible to transmit the gonococcus from fabrics to human beings. It is trying to our credulity to find a 4-year-old daughter and a 35-year-old father having gonorrhea at the same time with no other source of infection to the daughter other than the father, and yet I have observed this in a family of educated and refined people. I am glad to hear restated that it is possible to contract the disease in a water-closet. The superstition about getting rid of gonorrhea is a very prevalent one among the colored people of the South. I believe with Dr. Scott that there are many vicious men, and some vicious women, but, according to my observations, men are greater distributers of gonorrhea than women; because in dispensary work by far the largest number of cases of gonorrhea occur among females. It must be admitted that in many instances the male is the aggressor.

PREVENTION OF TUBERCULOSIS IN BABES BORN OF TUBERCULOUS PARENTS.*

CLIFTON SCOTT, M.D.
DES MOINES, IOWA.

In the presentation of this subject, I desire to present two cases and from them draw my conclusions and upon them base my arguments.

Case 1.—Mrs. A. H., a young woman, married at 19 years of age, had suffered with chronic pulmonary tuberculosis for five years previous, the existence of which, she and her mother denied. During the first two years of her married life she had frequent mild attacks of hemoptysis. She continually consulted her old, family physician, a homeopath, for these troubles, until Oct. 15, 1896, when she had a severe hemorrhage and I was called in haste. By putting her in bed and applying ice to the chest, the hemorrhage was controlled. I was then invited to take charge of the case.

I found a pulse of 96, temperature of 101, some moist rales in the lungs, quite marked emaciation; cough was not serious, except a paroxysm in the morning; there were no night sweats, and an examination of the first two specimens of sputum revealed no bacilli; in a third specimen, however, about fifteen or twenty to the field were found. I put her on hypophosphites with iron, quinin and strychnia; gave her liquid peptonoids with creosote, and recommended a liberal diet with a glass of cream to drink at each meal, with outdoor exercise and by arranging the changes in this treatment, she improved, gaining some ten pounds in weight. The cough diminished and the bacilli disappeared; no more hemorrhage occurred. She remained under my care for six months, when she ceased visiting me and I concluded that she thought she had discovered the method of treatment I was using and that she could carry it out herself.

About six months later her husband called upon me and wanted a prescription for indigestion, saying that she was nauseated and vomiting, and that she thought the medicine had disturbed her stomach. I inquired as to the possible existence of pregnancy, which he denied. I gave her a gastric sedative and heard nothing more for four months, when he announced that she was five or six months pregnant and that she was greatly alarmed, lest she might not be able to live through the ordeal. I advised him how to reassure her and saw nothing of her for two months, at which time she applied to me for a sore throat. She was now eight months pregnant and had developed laryngeal tuberculosis. There was marked hoarseness, almost complete aphonia. I applied an antiseptic spray and an alleviating treatment, and at term she was delivered of a girl baby, weighing five pounds. The child had an imperforate anus, which I corrected.

I had the child taken to an aunt and fed on modified cow's milk, and prevented communication between it and the mother. The mother was able to sit up and walk slowly about the house after a period of about 2 months. The laryngeal trouble had increased, the general emaciation of the body progressed from this time on and she died when the baby was about five months old. The child is now three years old and is a picture of health and vigor. It is well developed, having exhibited no symptoms of infection or hereditary effect.

Case 2.—A young woman, married at 20 years of age, claimed to have enjoyed previous good health. Father died of tuberculosis several years before. Marriage occurred in the second week of May, 1899. She claimed to have enjoyed good health during pregnancy. She had worked hard washing woodwork and cleaning a house into which they moved about February 10, and about March 1, I was engaged to attend her in confinement. I found a pulse of about 80, with no albumin in the urine. She claimed to feel perfectly well. I afterwards learned that she misrepresented her general condition of health. Her lungs were not examined.

She was confined March 14; mother and babe did well the first week after confinement and I did not see them again for three weeks. Twenty-five days after confinement, the mother rode three miles into the city in a street car and did some shopping. Two days after this she walked five blocks and read a paper at a literary club. The child had been nursed during this time, and twenty-eight days after confinement I was called to see her. I found her walking about the house, with a pulse of 120 and temperature, 103. I ordered her to bed and notified her mother, who came to attend her. An examination of the lungs exhibited some rales in the left lung. The range of the temperature, and character of the sputum did not indicate pneumonia. The progress of the condition for the next three days excluded bronchitis.

Dr. Eli Grimes was called in consultation; I had collected some sputum, which was stained and examined by Dr. Grimes and myself. The fields exhibited an immense number of tubercle bacilli. A diagnosis of acute tuberculosis was made. Dr. J. T. Priestly was called in consultation. The babe was immediately put upon modified cow's milk. The mother's condition progressed rapidly to an end, she dying just sixteen weeks after her confinement, and the child having nursed during the first five weeks after birth. Immediately after weaning, it began to exhibit loss of weight, palor and cough, also rales could be detected in the lungs. It passed through a well marked history of acute tuberculosis, dying one week after the mother.

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* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Diseases of Children, and approved for publication by the Executive Committee of the Section: Drs. H. E. Tuley, Edwin Rosenthal and Samuel W. Kelley.

In discussing these two cases, what evidence have we that the second one suffered from hereditary tuberculosis any more than should have been expected in the first? To be sure, in one case, tuberculosis was chronic in the mother, in the other, acute. But in the first case, the child was not allowed to nurse and in the second, because tuberculosis had not been diagnosed, it was allowed to nurse and it seems possible that the infection in the second case came from the mother's milk or possibly from kisses, caresses and other contact. I do not think that infection of the child in fetal life, through membranes of the placenta, can be positively denied, but that its occurrence is very infrequent is clearly proven.

The principal point, for which I wish to plead, is, that the old stereotype methods of visiting the mother a few weeks before confinement, securing a specimen of her urine and testing it for albumin is not a sufficient precaution for the safety of the child. These preliminary examinations, made at safe intervals during the last two months of pregnancy, should include a general physical examination and careful search for tubercle bacilli; many cases will thus be found, and our knowledge of the existence of tuberculosis, in otherwise unsuspected cases, will not only enable us to guard better the mother's condition, but will save many babes from infection, through guarding against the use of the mother's milk and infection by contact. If this method be carried out rigidly and the people educated to appreciate its importance and value, many children of tubercular parents can be saved from infection.

DISCUSSION.

DR. EDWIN ROSENTHAL, Philadelphia—I have at the present time under my care an exactly similar case. A woman with tuberculosis gave birth to a child one year ago. The usual bacteriological tests had been made to insure the correctness of the diagnosis. From the moment that this little girl was born it was not allowed to take any of the mother's breast milk. The child was fed on a home modification of cow's milk, and has not shown any evidence of tuberculosis. This is only one of many cases, yet I believe these are the exceptional ones. I believe we should use our influence to advise against marriage of a woman known to be tuberculous. I am convinced that this would greatly diminish the number of cases of tuberculosis.

DR. COLLINS H. JOHNSTON, Grand Rapids, Mich.—This paper brings up several subjects of interest. I think we can learn something from the experience of the veterinarians. The Wisconsin Agricultural Experiment Station has adopted the Stockholm plan of treating tuberculous cows. When an animal reacts to the tuberculin test it is not slaughtered, if in the early days of tuberculosis; nor is the milk of such animals used for any purpose. But experience has shown that these cows can be used for breeding purposes, and that if their calves are removed from the infected atmosphere, placed under good hygienic surroundings and fed on milk free from tubercle bacilli, they will not show any taint of disease. I think most of us must have observed the same thing in the human. Osler, as I have said, insists that there are only twenty cases of congenital tuberculosis in the literature. Dr. Scott's two cases were evidently the result of infection of the mother by her sputum or tuberculous milk. It has been proven, both experimentally and otherwise, in this country and in England, that tubercle bacilli exist in milk of tuberculous cows, and also in the cream and in the butter of milk from tuberculous animals. There can be no question, therefore, that tuberculous mothers can infect their offspring by nursing them. Another cause of tuberculosis in infants is the poor aliment frequently given children in the first year of their lives, whereby they are rendered less resistant to the germs of disease. The great mass of the profession pay very little attention to the question of infant feeding. It is one of the most important problems before the profession to-day.

DR. F. X. WALLS, Chicago—I should like to call attention to a specimen in the pathological exhibit here by Dr. Fütterer. The case is that of a child of a year old who died from localized miliary tuberculosis. In that case there was a primary tuberculosis of the intestine, with an extension of the tuberculosis to the mesenteric and the mediastinal lymph glands. The specimen has been so treated as to preserve the fresh appearance, and it shows the rupture of a caseous lymph node into a branch of the pulmonary vein, and from that a dissemination of miliary tubercles to the remainder of the lung This emphasizes very well the care which we should take in the management of the babies of mothers who have tuberculosis in evolution. The mother of this infant had been ill with tuberculosis, and becoming insane had been sent to an asylum. It is very probable that tuberculosis is rarely acquired through the milk of a nursing mother, because tubercle bacilli are not eliminated through the normal mammary gland, but only through a tubercular gland. The point made in the paper about keeping these little ones as far as possible from all sources of infection is very well taken, and should be borne in mind.

DR. J. NOER, Stoughton, Wis.—A wrong inference may be drawn from the investigations of the Experimental Station in Wisconsin. I live near that station and am familiar with the work. It is now six or seven years since the first investigation was made. It was found on testing 27 or 30 cows at the station with tuberculin that 86 per cent. of them were infected with tuberculosis. These were all, as I recollect, slaughtered, partly because of the danger of contagion and partly to demonstrate postmortem the diagnostic reliability of the Koch tuberculin test, then new, in incipient cases presenting no clinical evidences of disease. It is true that isolation and quarantine rather than the slaughter of tuberculous cattle has since been the practice in Wisconsin. It has been shown at the Wisconsin Agricultural Station that healthy calves could be raised from tuberculous cows, that is, provided that the calf was at once isolated from the mother and carefully protected from tubercular infection, through milk, drinking water, feeding trough or the stable. Now, as regards the danger of spreading tuberculosis in man through the use of milk and butter from cows having incipient or early tuberculosis, we have, I think, very much exaggerated the danger of transmission. I do not wish to be understood as advocating the use of milk from tuberculous cows. I would like to have all milk cows tested with tuberculin and those showing reaction excluded from the herd supplying milk for human use. This would be a reasonable precaution pending further investigation. There is, however, as yet no evidence to show that bovine tuberculosis is transmissible to man. Is there a person here who can report a case of such transmission? When it was shown that nearly all the cows at the Wisconsin Agricultural Station were tuberculous, a great deal of anxiety was felt by the families at the station, who had been using the milk from these cows for their children. No case of transmission has, however, been traced.

The early studies of the Russian student Rabinowitsch indicate that tubercle bacilli are very exceptionally present in market butter. Adami, of Montreal, has shown that only a fraction of 1 per cent. of Canadian cattle are tuberculous, yet human tuberculosis is fully as prevalent in Canada as it is in the Eastern States, where bovine tuberculosis exists in from 20 to 40 per cent. of the cattle tested. It is evident that we need more light on this subject before we formulate any conclusions that are worthy of serious consideration.

Dr. C. H. Johnston—I do not say that the milk of every tuberculous cow shows tubercle bacilli, because this is not the case, but it has been proven repeatedly that the milk of tuberculous cows may contain tubercle bacilli, even though there is no demonstrable tubercular lesion of the udder. The detection of a tuberculous udder in its incipiency is difficult even for an expert; hence, it may often happen that milk contains tubercle bacilli though no tubercular lesion can be demonstrated in the udder.

Dr. I. A. Abt, Chicago—I wish to enter a protest against the idea that there are only a limited number of cases of tuberculosis which are congenital in origin. There is no doubt in my own mind that the number of cases of congenital tuberculosis which occurs in young infants must far exceed the origin in any other way. When we think that children, three months, six months or a year old often die of tuberculosis, although they have been under the best possible hygiene, it seems to me reasonable to suppose that these cases are of congenital origin. The only proof of the hereditary origin of the disease would be the demonstration of tubercle bacilli in the placenta or in the endometrium.

Dr. Edwin Rosenthal—Dr. W. P. Northrup presented a paper on "Tuberculosis in Children" before the Philadelphia Pediatric Society, and showed that the very inception of tuberculosis in children is through the lymph nodes primarily.

Dr. Noer—I should like to know if any one present can produce a single case in which tuberculosis has been transmitted from the cow to a child. I am not aware that it has been demonstrated that bovine and human tuberculosis are the same.

Dr. J. C. Cook, Chicago—I have under observation a lady sick with tuberculosis. It began as a cervical tuberculosis. A most minute inquiry as to the source of infection leaves very little doubt about its having arisen from a pet monkey. This animal had been sent away two years previously because it had tuberculosis.

Dr. C. F. Wahrer, Fort Madison, Iowa—It would take a person with much fortitude to feed his children on the milk from a tuberculous cow. I wish to call attention to the specimens exhibited here by the Army Medical Museum. In this collection are several very beautiful ones of tubercular lesions of the udders. I advised a tuberculous mother not to nurse her infant, but to feed it on cow's milk. The cow presented every appearance of being healthy. The child died a few months later, and was found to be tuberculous, showing the importance of examining the animal before accepting the milk. Even if transmission of bovine tubercle to children can not be proved to take place directly, it were surely a good precaution not to feed a child milk from a tuberculous cow.

Dr. E. F. Brush, Mount Vernon, N. Y.—Some years ago I had a cow suffering from acute miliary tuberculosis. I took the animal to another part of the farm and killed her. I shut up 24 laying hens and a rooster and fed them with tubercular masses from the lungs and intestine of this cow. I selected for this experiment hens because their body temperature is high, about 108 F. Some of them developed tuberculosis within eight days after beginning the feeding experiment. All of them died within five or six weeks from the time I began the experiment. I took the last 24 eggs laid by these hens and set them under healthy hens. All of these eggs developed a chick, but every one of them was dead. I took four of the dead chicks down to the Carnegie Laboratory, but through some mistake or carelessness, they were not examined nor reported upon. I purpose to repeat the experiment.

In regard to the transmission of tuberculosis from cattle to children, I would say that at one time I found a cow with acute miliary tuberculosis and killed her. There was a large tubercular encysted mass in the cow's mediastinal space, which she had probably had for years. The gentleman who owned this cow had brought up seven children on her milk, and although these children must have been fed on tuberculous milk, they remained healthy and did not develop tuberculosis. There must be something else besides the mere presence of tubercle bacilli to start the tubercular disease. The additional element, I think, is an elevation of temperature. I think tuberculin is doing an immense amount of harm, and that its use is entirely unnecessary as a means of diagnosis. I know of a herd that is kept tuberculous by testing the animals with tuberculin. It is a very easy matter to make a diagnosis of tuberculosis in a cow when the disease has advanced far enough to do any harm.

Dr. Clifton Scott, in reply—I wish to thank the members for this interesting discussion. I was much pleased to hear Dr. Abt point out what must be the conditions to have congenital tuberculosis. I do not believe that congenital tuberculosis is so frequent as Dr. Abt seemed to indicate, but the fact that a cow may be tuberculous and not give tuberculous milk unless there is a lesion of the udder points strongly to the fact that the mother may have tuberculosis and yet if the endometrium is not tuberculous during pregnancy there is not much probability of infecting her child. I have always felt a little guilty about not having discovered that the mother in my case was tuberculous before her confinement, for I might possibly have been able to save that child. I did not know that the mother was tuberculous, yet I think if I had been given the opportunity to give the case sufficient attention before confinement I should have discovered this fact.

THE ETIOLOGY OF PARETIC DEMENTIA.*

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The lesion of paretic dementia is that of a diffuse parenchymatous atrophy of the nerve cells and part, at least, of the neuroglia. This process is essentially chronic and involves more or less the whole of the cortex, even extending to the basal ganglia and the cord. The well-known vascular changes start in the minute arterioles and in a slow but progressive manner involve the nutrition of the cells thereby causing degeneration of the neurons and neuroglia. The cortical substance undergoes atrophic changes and the lymph spaces dilate or widen; the lymph currents are interfered with —they are laden with debris—and ultimately the combined processes produce profound degenerative changes.

The question of the cause of this now well-recognized degeneration is seemingly in dispute, but I dare say that we all feel that there should be but little controversy over this question, when in the light of the accumulated knowledge of to-day we find syphilis paramount as an etiological factor. In fact, it is the one factor—the primary factor—and with Dana we can say "if there were no syphilis there would be no paretic dementia. Other authorities endorse this view, notably Mongeri,[1] who says "syphilis is necessary for the disease to develop; it is the factor which prepares the soil, while alcohol and heredity merely aid in its development." "Without syphilis, congenital or acquired, it is impossible to have general paralysis." These statements do not seem to lack verification when we consider the inoculation experiments, detailed by Krafft-Ebing, where in a series of cases, typical examples of paresis, in which by strict inquiry and examination the previous existence of syphilis could not be ascertained and in the face of this negative history, the patients were inoculated with virulent specific virus and yet after the allotted time for infection no evidences of syphilitic infection occurred. Not a sign or a symptom appeared, thus confirming at least by negative evidence that previous infection had occurred and serves to impress us in the belief of the existence of latent syphilis in all cases of paretic dementia.

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* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Nervous and Mental Diseases, and approved for publication by the Executive Committee: Drs. Frederick Peterson, Hugh T. Patrick and H. A. Tomlinson.

[1] Am. Year-Book, 1901.

Paretic dementia certainly, then, has for a background syphilis. It is not in truth a syphilitic disease *per se*, but a para-syphilitic disease, due to the effects of the syphilitic poison. That is not a syphlitic disease, we know, by the therapeutic test. It is not amenable to anti-syphilitic treatment, in fact such treatment is utterly useless, although many practitioners persist in giving it a trial. The luetic poison of syphilis acts as do intoxicants—it is a toxin—there is auto-intoxication interference with nutrition and after its very early and prodromal stage causes a degenerative change of the nerve elements. There are no syphilitic lesions and in my experience the evidences of syphilis are, as a rule, seldom marked. In the beginning, the vascular stage of paresis, the lesions are those due to a toxin. There are none of the common lesions of syphilis such as noted in cerebral syphilis, viz., gummata and endarteritis. The toxin acts upon neural tissues to produce the morbid alterations, which, while at first they may be purely functional, ultimately become well-defined organic changes.

In the etiological study of about two hundred cases of paretic dementia, I found the history of syphilis in fully 60 per cent., which, in view of the fact that the history of many of these cases is meager, is yet conclusive as to syphilis in the general run of such cases. Inasmuch as it is impossible to confirm by inoculation tests the cases in dispute, we are disposed to believe that possibly many more of these cases are syphilitic and lack but the opportunity to establish the proof. I have sometimes thought that while we regard syphilis as the primary etiological factor, there may be other contributing factors, inasmuch as in my experience I have had several cases that, seemingly at least, have been pronounced or developed after some one of the infectious fevers. Thus suggesting the thought that these fevers assisted in some way in the development of the disease.

The following case, recently under my care, is an illustration:

A ranchman, with syphilitic history, who after successful years in business was induced to go to the Transvaal. Here he contracted pernicious malarial fever, from which he suffered greatly while in Pretoria. He was sent home and while en route it was noticed that he was acting queerly, developed mental peculiarities which in view of subsequent history were indicative of general paralysis. I say in view of subsequent history, simply to enforce what I said in a paper before the Illinois State Medical Society in 1892, that the early symptoms, the functional stage. of paretic dementia is not recognized from other forms of insanity by the attending physician and in consequence the prodromal stage is passed before the alienist meets the case. The stage when if any help is to be had for this disease it is to be given at this time. This patient developed into a typical case of paretic dementia and died after two years from the first appearance of the disease.

Another case first showed recognizable mental peculiarities during convalescence from typhoid fever, the mental symptoms being attributed to a post-febrile psychosis. This case was of the fulminating type, rapid in its course and terminated by death in three years. Another case with negative syphilitic history, during convalescence from an acute articular rheumatism, was noticed by his family to have certain marked changes in his disposition. They thought nothing of it after the family physician assured them "it would pass away." But no, the case progressed, and rapidly too, resulting in death in about two years and a half after the attack of rheumatism.

I am sure that one swallow does not make a summer, but here are three cases coming under my observation, wherein after acute infectious fevers there has followed paretic dementia. Syphilis appears in the history of two—arthritic diathesis and rheumatism in one, all of whom had severe illness, just prior to appearance, at least of recognizable symptoms of paresis, and from such coincidences I am inclined to believe these diseases were contributing etiological factors.

The hereditary history of most of my cases shows that the neuropathic diathesis is the soil upon which this disease grows. Berkley says: "Heredity and syphilis are the most potent etiological factors." In his pathological findings he notes "microscopical evidences of irregular construction and anomalies in the cortical cells." From these facts we infer that there is a certain instability of the nervous elements which contributes to the susceptibility of an individual to the luetic poison of syphilis; that there is in fact selective action of this toxin upon neural tissue under certain conditions. This opens up that great question of immunity and susceptibility which is not to be discussed here. However, experience among the insane, including the cases of paretic dementia, leads all clinicians to form an opinion as to the family peculiarities, the hereditary considerations necessary in studying his cases, when he comes in contact with other members of the family than the patient himself. From this observation, however cursory, he draws the practical conclusion that heredity is certainly a factor and a potent one in paretic dementia.

Alcoholism is a contributing factor, but not of the importance ascribed to it by some. The brain lesions of the alcoholic are not those of paretic dementia and they simply are contributing degenerative conditions, which directly interfere with brain nutrition. I am told that in Colorado, alcoholism is usually a part of the history of such cases, but whether they are mere coincidences or not remains to be seen. I am inclined to believe alcoholism is coincidental in most all cases. I very much question cold, exposure and traumatism as being etiological factors; they can not cause such grave pathological changes. I conclude that:

1. Syphilis is the factor in chief which causes paretic dementia.
2. Infectious fevers with their toxic influences are contributing etiological factors.
3. Heredity is a potent factor.

DISCUSSION.

Dr. Harold N. Moyer, Chicago—I do not know that I have any exception to take to some things stated by the essayist, but I certainly do not agree to all of the three deductions with which he closes his paper. I think we are not prepared to make the claim that paretic dementia is a para-syphilitic disease, nor do I think the author makes that claim. I know that in from 60 to 80 per cent. of cases of paretic dementia we get a syphilitic history, but does that justify us in saying that all the cases are syphilitic? If so, we must assume that because in a considerable proportion of cases syphilis is the etiological factor, the rest must have had latent syphilis which we were not able to recognize. I believe that such a doctrine is fraught with considerable error, because it is not justified by facts.

The hereditary influence in paretic dementia is very limited and is usually confined to cases of impure paretic dementia, those where we have it with a background of paranoia.

There is one question in relation to paretic dementia which is of considerable importance, namely, the racial distribution of the disease. Among the natives of Hawaii, syphilis is a household disease; there is scarcely a native who has not been syphilized. Still, not a single case of paretic dementia has been recognized. There are other races among whom syphilis is very common, while paretic dementia is rare. The converse is also true. Recent statistics have shown that while syphilis is rare among the Hebrews in London, as compared with other Caucasians, paretic dementia is relatively quite common.

Dr. E. G. Carpenter, Columbus, Ohio—While my own experience is in accord with the general consensus of opinion that syphilis plays an important part as an etiological factor in paresis, still cases have come under my observation in which it was impossible to obtain any history or evidence of syphilitic lesions, and it is my belief that it is possible for paresis to be caused by factors other than syphilis. I believe that in the causation of many cases of paretic dementia, stress is an important factor. This, together with exhaustion from sexual excesses and the abuse of alcoholic stimulants, is sufficient to produce paresis in one having a neuropathic constitution. I think that in all cases we should be very cautious in asserting that a certain condition is due to syphilis, as there are circumstances where such a statement might do some people much harm; for example, in cases where the question of a pension and insurance is involved.

Dr. Richard Dewey, Wauwatosa, Wis.—I have seen at least six or eight cases of paretic dementia in which—as far as you can exclude anything—syphilis could be excluded, unless hereditary syphilis would be assumed. That assumption, however, can not be accepted without the existence of certain data upon which to base it. The statement made by Dr. Moyer, with reference to the racial distribution of syphilis and paretic dementia, leads me to refer to a confirmatory article bearing upon this subject which recently came under my observation. In this article the statement was made that while syphilis was very common in Mohammedan countries, paretic dementia was much rarer there than in non-Mohammedan countries, especially in Christian countries.

Dr. Sydney Kuh, Chicago—It seems to me that the question as to the etiology of paretic dementia, so far as anything definite can be said about it to-day, may be summed up as follows: That there is much evidence to show that syphilis is by far the most important etiological factor, both in paralytic dementia and in that other disease which is so closely allied to it, tabes. Whether or not syphilis is the only etiological factor it is impossible to say. The argument that in countries where syphilis is common, paretic dementia and tabes are very rare would prove nothing either in favor of or against the theory that there is some connection between the two conditions. The character of syphilis has changed completely within the last four centuries. When syphilis was first described, it had the character of an acute infectious disease which in a relatively short period terminated fatally. It is very possible that in certain countries the character of syphilis has assumed a different form from that which it has assumed with us. It seems that certain types of syphilis are particularly prone to produce grave degenerative changes in the nervous system of certain individuals. Instances have been recorded where two or three men were infected with syphilis by the same woman at practically the same time, and all developed the symptoms of tabes.

Dr. Edward E. Mayer, Pittsburg—While it is a well-known fact that most cases of paretic dementia give a syphilitic history, it seems to me that we must place the relationship between these two diseases upon a more scientific basis. Because syphilis has occurred in a case of paretic dementia, it does not indicate to me that syphilis is the etiological factor. We should try to ascertain if the syphilis is responsible for the lesions. As the essayist has pointed out, the lesions found in paretic dementia are not those of syphilis. The time that has elapsed between the syphilitic infection and the onset of the paretic dementia should also be borne in mind. We should not at once jump to the conclusion that syphilis is the cause of the paretic dementia. That syphilitic toxins—whatever they are—may evoke nutritional disease of the brain-cells can not be doubted, sufficient, indeed, to produce pronounced disease, but we must satisfy ourselves as to what conditions are produced by it, how it impairs nutrition and what action its toxins have. There may be other factors—the various toxemias, or exhaustion, or even traumatism may be the factor in the disease. I am willing to admit that syphilis is a most important factor in the causation of paretic dementia, but it should not be necessarily regarded as the only cause.

Dr. H. A. Tomlinson (chairman)—In considering the possible etiological relationship between syphilis and paretic dementia we should not lose sight of the fact that syphilis is a widely prevalent disease and almost as old as history, while general paresis, or paretic dementia, as the writer calls it, is comparatively infrequent, and, so far as we know, limited to the centers of modern civilization. Furthermore, when paretic dementia occurs in a syphilitic, the manifestations of the latter disease are not conspicuous and do not resemble other syphilitic affections of the nervous system, either in symptoms of somatic involvement or in its histology. Besides, syphilis frequently attacks the brain and produces degenerative disease, accompanied by dementia; that is not general paresis. It may also be claimed that the victims of syphilis and general paresis come from the same general class, and would therefore be equally liable to other possible causes of general paresis.

Dr. Frank P. Norbury, in reply—I do not know that I can add anything further to the discussion. The fact is the Chairman covered the points that I had in mind. One of the speakers referring to stress as a factor in the production of paretic dementia, said that it was a prominent cause. In my experience this is not such a factor as is supposed, for comparatively few of my cases have come from the large cities—the busy centers of civilization—most of them come from the rural districts, and I am quite sure that they were not subjected to any special stress, either in connection with their occupation or social conditions. I believe the neurasthenic class alone succumb to stress. I have never seen a neurasthenic develop paretic dementia. In most of my cases the paretic dementia developed from fourteen to eighteen years after syphilitic infection, while several of them gave no history of infection at all. Yet from my knowledge of them as individuals I knew that they had often been exposed to such infection. In conclusion, I wish to emphasize the importance of the early recognition of paretic dementia. At the beginning of this disease there is a functional stage, as pointed out by Folsom some time ago, and if the symptoms are recognized during this stage we may be able to do something to arrest its progress. If allowed to go on, organic changes occur, with resulting dementia and death.

Clinical Report.

CASE OF SIMPLE FRACTURE OF THE VAULT, WITH MENINGITIS ON THE THIRD DAY. AUTOPSY.

EDWARD T. ALFORD, M.D.
INTERNE IN THE CHICAGO BAPTIST HOSPITAL.
CHICAGO.

The patient, Mr. W., while riding on a bicycle, Tuesday morning, June 1, was struck by a street car and severely injured. He was immediately taken to the Baptist Hospital, entering the service of Dr. Bayard Holmes, at 10:15 a. m. At this time he was conscious; there was no deviation of the eyes, no ptosis and the pupils were neither contracted nor dilated, and they both reacted to light. His hearing was apparently normal and there was no hemorrhage from the ears. There was no aphasia, as speech was normal, and no paralysis in any part of the body was evident. There was a good deal of hemorrhage from the nose and mouth, the upper lip being cut from the left nostril through the lower border of the nasal septum and through the lip a little to the left of the median line. This involved all the structures of the lip. A second wound on the inner surface of the mouth was found extending backward from the right angle of the mouth for the distance of an inch or more. Some of the teeth on the right side of the lower jaw were broken off, and the mucous membrane lacerated; the right lower jaw was fractured with over-riding displacement, the posterior fragment over-riding the anterior. This fracture was shown by crepitus and deformity of the lower dental arch. A small contused incised wound was found over the occipital region and another long contusion at the outer right border of the frontal bone.

The patient was then anesthetized, the occiput shaved, and the wounds about the nose and mouth were carefully sutured and dressed. An attempt was made to reduce the fracture of the lower jaw by the use of a four-tailed bandage, but reduction could not be maintained. Patient was then put to bed.

Tuesday afternoon the patient vomited considerable blood, and that night was delirious for a short time. His temperature at this time was 99.5, pulse 88. On Wednesday morning I examined the patient with Drs. Holmes and Teschan. There was at this time no extravasation of blood under the lids or over the mastoid regions. The pupils were equally contracted, which contraction might have been the result of median line and muscular tonus was normal. There was no deviation of the eyes or ptosis. The tongue protruded in the median line and muscular tonus was normal There was no evidence of blood in the ears and hearing was apparently perfect. His temperature was 99.4 and his pulse 76. In his conversation he seemed rational, but he did not realize his serious condition. On Thursday morning, June 13, an examination showed improvement. There were no evidences of fracture of the base of the skull or compression of the brain. His temperature still remained about 99.4 and his pulse 88. The examinations of the urine were negative. The right lower jaw had become very much swollen and infiltrated.

An examination Friday morning, with Drs. Holmes, Teschan and McCaw, showed no paralysis or spasms of the face, arms or legs. There was no aphasia. There was no deviation of the eyes. The pupils were equally dilated and reacted to light. An extravasation of blood was noticed over both mastoid regions. This extravasation was more marked on the right side, and we thought that there was a slight extravasation under the right eye. Hearing was apparently normal. At noon of the same day he complained of a severe headache; his temperature was 98.6, and his pulse 78. At 3 o'clock in the afternoon he became delirious, got out of bed and walked about the halls. He rapidly grew worse, and about 4 o'clock was put in restraint. At 8 o'clock that night I examined the patient with Drs. Holmes, Boice, Teschan, Biggar, and McCaw; during the examination Dr. Sippy came in. At this time the temperature, per rectum, was 104.4, the pulse 78, and the respiration 25. The restraint which had been applied was removed. Some hemorrhage was noticed from the nose. The pupils were equally dilated. There was no ptosis or deviation of the eyes. Sensation on both sides of the face seemed to be normal. He was easily tickled in either nostril, and when struck lightly on either side of the face he seemed to respond. Two or three times a slight spasm was noticed going up the left side of the face and involving the lids. Extravasation of blood was seen under the right eye and over both mastoid regions. This was peculiar in that it extended above and in front of the ear. The right lower jaw and floor of the mouth were infiltrated and swollen. Kernig's sign was not present. The patient was excited, had illusions and was constantly picking and pulling, with a good deal of force, at objects seen about him.

At this time we assumed from the findings: 1, that there was no compression of the brain, either from depressed bone or hemorrhage; 2, that there was a fracture of the base of the skull in spite of the fact that there was no deviation of the eyes, no ptosis, no hemorrhages from the ears, no apparent loss of hearing, or no paralysis, but from the fact that there was hemorrhage from the nose and extravasation of blood over the mastoid regions and under the right eyelid; and, 3, that the patient was suffering from acute general meningitis, the infection having probably occurred through a fracture in the ethmoid or a fracture through the petrosa into an infected antrum.

The prognosis made at this time was that the disease was absolutely fatal, and that no treatment was indicated. The patient was then put in the care of a strong male nurse, without restraint, and directions were given to watch the patient for two hours or more without treatment in order not to obscure the diagnosis of the case, and after two hours a sedative might be given in sufficient quantities to keep the patient quiet. An ice bag was applied to the head, but no medicine was given until 2 o'clock, when 60 grains of sodium bromid was given per mouth. The patient rapidly grew worse during the night, and had involuntary urinations. His temperature at 5:20 a. m. was 107, his pulse 144, and respirations 58. There was a tendency for his tongue to fall back into the throat and to impede his respiration. He died June 15, at 4 o'clock a. m., while in a general convulsion.

POSTMORTEM.

Permission was given to enter the cranium by the coroner. It was held in the presence of Drs. Holmes and Boice.

The contused wound over the occiput and over the right border of the frontal bone were healthy and showed no redness, swelling or edema. The lower jaw on the right side corresponding to the fracture was very much swollen and densely infiltrated, the base of the tongue was also infiltrated and swollen. Extravasation of blood was seen over both mastoid regions, this extended above and in front of the ears. After dissecting the scalp forward an extravasation of blood was found starting from a crucial fracture of the vertex and extending downwards on both sides of the head in front and back of the ears, thus accounting for the extravasation seen in previous examinations.

The fracture followed the sutures, commencing about the posterior third of the interparietal suture, running forward and extending into the frontal bone for about an inch, turning a little to the right as it entered the frontal bone. It also extended from the interparietal suture along the frontoparietal sutures on either side for the distance of an inch and a half. The fracture opened into the superior longitudinal sinus, and a small thrombus was found along its course extensive enough to cause obliteration of the sinus.

The meninges were injected and somewhat edematous. The ventricles were distended and the cerebrospinal fluid increased in quantity. The brain tissue seemed somewhat softer than normal. The dura mater about the base of the skull was carefully and thoroughly removed and a careful search made for the fracture of the base of the skull, but none could be discovered.

The middle ears were opened and inspected. The drum and ossicles on both sides were normal and there was no evidence of any present or previous inflammation. There was peculiar circular depression about one-half inch in diameter in the middle fossa of the skull on the right side just at the base of the petrous portion of the temporal, looking as though it might have been the result of a previous ulcerative process, but no present pathologic significance was attached to this. Cultures were taken from the spinal cord by subarachnoid puncture and from the ventricles, but showed no growth.

This case is of peculiar interest in three respects: 1. The scalp was apparently uninjured over the seat of the fracture of the vault. 2. The extravasation of blood behind the ears, so common and almost pathognomonic in fractures of the base, came from an unrecognized fracture of the vault. 3. The infection of the meninges must have come through some small and undiscovered fracture into the ethmoid cells, or the offending microbes gained access into the blood from the focus afforded by the swollen and infiltrated jaw and localized in the meninges, causing an acute serious leptomeningitis; or the meningitis may have occurred as a part of a progressive sepsis.

Petrifaction of Kidneys.—More than 400 calculi were found in the left kidney and 60 larger ones in the right, at the autopsy of a young soldier who had died suddenly with heart symptoms. Death was due to enormous dilatation of the heart, as there had been no retention of urine. It is described in *Méd. Moderne*, 1901, 29, as actual petrifaction with consecutive interstitial nephritis and fibrous degeneration.

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A PREMATURE CRITICISM.

An editorial on the surgical aspect of President McKinley's case in a leading medical weekly calls for some comment. The preceding issue was generally optimistic, as were all at the time from the apparently favorable aspect of the case during the first few days. The editorial under consideration is distinctly critical, and indeed decidedly unfriendly, in its comments on the conduct of the case and the shortcomings of the autopsy. The medical profession as yet has had no full report of the findings, none that in our opinion authorizes us in indulging in unfriendly criticism or in extensive premature generalizations, but this is evidently not the view held in the editorial in question. It admits that while the operation on the President was faultless in its technique and brilliant as far as it went, it was necessarily an incomplete one, but it goes on to say that the surgical judgment of the surgeons was in error, implying that they should have disregarded the necessary limitations of the operation, the patient's condition and the value of the precious time. Attention is given to the autopsy, and while admitting that not one of the principal lesions gave any evidence of its existence during life, the writer talks about "a most startling error in diagnosis," and wants to know why, if it was impossible to follow the course of the ball at the time of the operation, the gentlemen in the case were so satisfied with the "real nature of a wound that they obviously knew nothing about?" The absence of an x-ray examination during life is harshly commented on as if there could be no possible reasons against it, and the insinuation—certainly not a justifiable one as is proven by the evidence submitted at the trial just closed—is made that it was not thought worth while at the autopsy to thoroughly search for and find the bullet. It even goes further than this and speaks of a condition of which we have no evidence whatever, such as a leaking kidney. There is, it seems to us, an evident "I told you so" spirit in the editorial that is unfortunate, to say the least.

We see no reason to change the opinion we have already expressed, namely, that all that medical science and conscientious care could do for the President was done. Whether "under like circumstances in future the gentlemen concerned would act somewhat differently" may be a question, even with the knowledge gained by this experience; the conditions might make it impossible to do more. We do not know that such conditions did not exist in the case of the President, and lacking that assurance we believe such a comment unnecessary and unbecoming. The operation was one to try to the utmost the courage and judgment of those in charge, and we do not feel assured that any others in their place could have done better. To err is human, as our contemporary judiciously quotes, but we do not think it has been clearly demonstrated beyond question that there were any avoidable errors in the management of this historic case.

While we believe that honest criticism is always to be encouraged, on such an occasion as this it would be well to be sure of the absolute truth of the statements on which criticism is based before it is made. A journal claiming to represent the medical profession ought certainly to guard the rights of those it claims to represent so long as truth and facts allow it to do so. There will be time to criticise the management of the case of President McKinley when all the facts shall be revealed in the full report of the case and in the official report of the autopsy. It is well in all cases where there are not the strongest reasons to the contrary that, as a lay journal says, "we should give good men credit for good motives, good judgment and good actions. . . . Some time a valuable life may be lost because the would-be life saver is not at his best and bravest through fear of hostile criticism or carping misapprehension."

RELATIONAL ANATOMY.

Professor Jackson has done a real service in introducing what must be regarded as a new and important *method for preparing and studying gross sections* of the human body, which he described in his paper printed in these columns last week.[1] The great value of the frozen sections made by Braune and others has been generally recognized, but the difficulty of making these sections has hindered many anatomists from using them to the extent which the importance of the study for the acquisition of a knowledge of topography renders desirable.

The formalin injection used by Dr. Jackson fixes each organ perfectly in its natural position. Freezing is entirely unnecessary for the making of sections; they can be satisfactorily prepared with the aid of only a butcher's knife and saw. The principal advantage of the method, aside from its simplicity, lies in the ease with which the preparations may be preserved, handled and studied without danger of injury.

The procedure promises to be of value not only for surgical anatomy but also for the study of human anatomy as a pure science. The student who learns his gross anatomy by dissection alone can not possibly gain a normal conception of the natural relations of the various parts to one another. Dissection consists essentially of the removal of the coarser connective tissues and fat from the body. This has to be done gradually, and while the method permits of the gaining of knowledge concerning the form of the individual gross structures, the student unavoidably loses sight of the real relations of structure to structure as they exist before the tissue has undergone that mechanical analysis which dissection necessitates. If three series of sections—corresponding to the three dimensions of space—through the whole body made by Dr. Jackson's method be carefully studied and drawn the student should be able to make a mental reconstruction of the entire organism of greater practical value to him than that obtainable by any other method. We do not mean by this that dissection is likely to be superseded by a study of such series of sections; on the contrary, thorough and clean dissections are now more important than ever; but it may fairly be prophesied that dissecting-room anatomy will from now on be supplemented in much greater degree than heretofore by some such topographical method as Dr. Jackson suggests. The two methods, that of a study of serial sections and that of dissection, will be reciprocally beneficial to one another.

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[1] See The Journal of September 21, p. 731.

It is gratifying to note that the topographical method employed has been introduced by a professor of anatomy in a medical college of the Middle West. Now, that medical schools of the better sort in this part of the country have come to recognize the necessity of having the chairs in the scientific branches of medicine filled by men who give their whole time to teaching and investigation, we may hope not only that anatomy, physiology and pathology will be better taught to medical students than they have been in the past, but also that these sciences will from time to time be enriched through the activities of their representatives in the fields of original research.

THE RESORPTIVE POWERS OF THE PLEURA.

This important question has been investigated experimentally by Grober[1] in Stintzing's clinic in Jena. Of the various factors that have been emphasized as promoting absorption from the pleural cavities, Grober does not attach any importance to the aspiration on part of the thoracic duct nor to the *vis a tergo* of the blood pressure and of the tissue fluids. The purely physical forces of osmosis and capillary attraction are of some importance undoubtedly. Whenever accumulations of fluid in the pleural cavities are of less concentration than the blood serum and the lymph, the walls of the vessels in the pleuræ will act as semipermeable membranes and permit currents of fluid to pass into their contents, according to the general laws of osmotic pressure.

Thus Castaigne[2] finds that during the first week of exudative pleuritis the pleural fluid is more concentrated than the serum of the blood. Aspiration would be useless at this time because fluid would rapidly accumulate in the pleural cavities.

But the most important factors are found in the movements of the respiratory organs. During respiration the intrapleural pressure varies as the lungs are pressed more or less firmly towards and against the chest walls; in case the pleural layers come in contact at certain points the fluids in the cavity are pressed into the openings in the wall; and finally as the ribs are separated and approximated the lymph vessels in the costal wall which communicate by openings with the pleural cavity are alternately compressed at some points and extended at others, thus constituting a suction pump. When respiration is shallow and superficial, absorption from the pleura is less marked than when the respiration is normal. And naturally absorption is also dependent largely upon the actual conditions of the tissue in the pleural membranes, whether normal or pathological. It is not at all surprising that absorption is greatly delayed when the pleuræ are the seat of various forms of inflammation. Grober also adduces a certain amount of evidence that the healthy pleura absorbs living micro-organisms and toxins which are thereby rendered harmless. In the inflamed pleura this power is also diminished. To the surgeon and the physician who alike are interested in the removal of pleural exudates Grober's experiments present much of value and interest.

COMPLEXION AND ABILITY.

Mr. Havelock Ellis' recent papers on certain questions of British ability have developed some interesting statistics. He finds from an analysis as regards complexion, of the portraits in the National Gallery, that fair complexion is more frequent among political agitators, soldiers, sailors, scientific men, poets, etc., while statesmen, clergymen, literary men, etc., are predominantly dark. Political agitators and reformers are at the one end of the list, being very largely blonds; the opposite extreme is occupied by actors and actresses, who are almost always dark. So far as Ellis can learn, "no really fair person has ever risen to the highest dramatic eminence in England," and, so far as he has been able to observe, the case is the same throughout Europe. He concludes that excess of fairness prevails among those of restless enterprising spirit, and the reverse is true in the aggregate of dark people, which includes the men of thought rather than of action, the teachers of religion, the humble classes, in short those whose tendency is to practice and preach resignation.

The explanation he gives is that the relation between pigmentation and mental aptitude is chiefly indirect and due to race. The fair man is energetic and restless, it is suggested, because he belongs to an original fair stock of people that possessed these qualities, while the dark man tends to be resigned, religious and imitative, yet highly intelligent, because he belongs to a stock with those characteristics. There are some criticisms that are naturally suggested by these conclusions. In the first place, the figures are too small; the writer generalizes in regard to people of low birth, who are probably not very fully represented in the British National Gallery of portraits, from a dozen individuals. Considering the composite origin of the British race and the frequency of ultra family variations it appears incorrect to speak of anyone belonging to any particular stock, whether fair or brunette. It might be a little better to say, "throws back" to such a stock; but this also is a conjecture. There is no one of the average Britons who has not had a very mixed ancestry in this particular respect; the one pure race, one of the most enterprising and active ones, at least in a business way, is very generally brunette in Great Britain—the Jews. On the whole it would seem better to explain the facts, so far as they exist, by the old temperament doctrine, which has at least a little basis of truth, at the same time recognizing the imperfection of the data and the weakness of any extensive generalization upon them.

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[1] Ziegler's Beiträge, 1901, xxx, 267-347.

[2] Soc. Méd. des Hopitaux, 1900, July 6.

MEDICAL EDUCATIONAL STATISTICS.

The task of working up the data and tables which appeared in the educational number of The Journal was one of great magnitude and was rendered all the more difficult by some of the minor schools neglecting requests for information. It is possible that there may have been an error in the matter of some of the figures, but we believe that those given are *practically correct* and that we have presented statistics that have never before been attempted in this country. It will be appreciated if the authorities of the different colleges will verify our work, or notify us in the event of any misstatement that it may be corrected. It is intended that the work shall be carried on in an educational number each year, thus giving reliable information and figures in the matter of medical education. One mistake was made in a note crediting the figures of the population to the United States census of 1890; they were taken from that of 1900.

The table which gave the number of students from the different states in the several colleges was necessarily incomplete owing to the fact that the catalogues of some of the schools do not indicate the state from which the student comes. However, many lessons may be learned from it. It is, for instance, interesting to note especially in regard to the small schools, how the patronage is entirely local.

Considering all physicians in this country, as given by Polk's *Medical Register*, 1900, except army and navy surgeons, we find that there is one physician to each 637 inhabitants. Of the total number, there are about 104,094 belonging to the regular school, 10,944 to the homeopathic, and 4,752 to the eclectic and nondescript schools—in all 119,788. To this number must be added those receiving degrees the past two years, and of course death subtracted. The probability is that in round numbers there are 125,000 licensed physicians in the United States.

After much correspondence the Pacific Coast Regular College of Medicine has been reported as having had 14 matriculants and 7 graduates the past year. This gives a total of 5,451 graduates and 26,431 students registered for the school year 1900-1, and it is thus shown that one of every 2,888 inhabitants was a medical student.

There are in the United States 155 colleges that confer the degree of M.D.—122 of the regular school, 20 homeopathic, and 13 eclectic and nondescript. In our table of medical colleges 159 were shown, but two of these, the School of Medicine of the University of Kansas and the Medical Department of the University of North Carolina, do not grant degrees, the two homeopathic colleges in Kansas City, Mo., consolidated, and the Curtis Physio-Medical Institute, Indianapolis, was believed to be in existence, but nothing authentic has been learned. This gives the almost startling ratio of one medical school to approximately every 500,000 population in this country. Comparing this to the figures shown in some of the other countries: Great Britain has one to every 2,350,000; Germany, one to 2,500,000, and Austria, one to 5,000,000.

TESTIMONIAL BANQUET TO DR. N. S. DAVIS.

The banquet to be given in honor of Dr. N. S. Davis, at Chicago, on October 5, ought to be a notable event. We, in this country, are beginning to adopt the praiseworthy custom of showing our great men that we appreciate them while they are yet with us, and there has been no better opportunity afforded to give honor where it is due than this one. It is sixty-five years since Dr. Davis entered on the practice of medicine and these have all been years of active usefulness and prominence in the profession. His connection with the founding of the American Medical Association would of itself insure him an immortality in our records and memories, but it is only one incident of his leadership in all good works and causes. His active advocacy of higher medical education, which he was one of the first to promote, of higher ethical standards, of temperance, etc., can never be forgotten so long as there is a history of American medicine, and while in his long life of usefulness there may have been many who have differed with him on some details, no one has ever questioned the sincerity and honesty of his opinions or his honorable methods. There is no one living at the present time that the American medical profession ought more to delight to honor, and we are sure that its members will not allow the occasion to pass without showing their appreciation of the opportunity.

LOW BIRTH-RATE NO CAUSE FOR ALARM.

An English clergyman, the Dean of Ripon—in that usual outlet of British feeling, a letter to the *Times*—laments the decrease of the birth-rate in England, which has fallen from 34 per 1000 of the population in 1875 to 29 per 1000 in 1900. At this rate he concludes the birth-rate will in time be entirely suppressed and the climax of England's decadence be complete—*with its final baby*. Such forebodings remind one of Mark Twain's calculations on the length of the Mississippi.

which was continually being shortened by cutting off bends. He calculated the time when Cairo would be a suburb of New Orleans and offered the result as an example of the beauties of statistics which give the largest results of theory for the smallest investment of facts. The birth-rate of England, like that of every modern civilized country with a higher standard of living and diminishing proletariat, tends to decrease, and if this decrease does not progress too far it is a sign of prosperity and well-being of the population. An excessive birth-rate, like that of parts of Russia, means usually an excessive infantile death-rate; children come too often to be properly cared for, and are too common to be duly valued. If the birth-rate falls below the death-rate, of course the result is national extinction; but this has not happened anywhere lately, to our knowledge, except among a few degenerate Indian tribes, etc. Even a low enough ratio to indicate immediately threatening decadence is rare where vital statistics are reliably collected. Those of Great Britain must be beyond any question, but the fall of 5 per 1000 in twenty-five years need not as yet be very alarming.

"SHADOWING."

The Sacramento *Bee,* the paper which was so indefatigable in its opposition to the ostrich policy of the California authorities as regards the plague last spring, publishes a curious detective's bill recently paid by the California State Board of Health. The bill is for "shadowing" Drs. R., F., and W., which the *Bee* interprets to mean Dr Ryfkogel, the ex-bacteriologist of the State Board of Health, who left the board apparently on account of his diagnosis of the plague in the earlier San Francisco cases; Dr. J. M. Flint, bacteriologist of the Marine-Hospital Service, and Dr. J. H. White, United States quarantine officer and successor of Dr. Kinyoun at San Francisco. If these identifications are correct and the paper furnish some evidences supporting them, at least in part, besides its positive editorial affirmation, the question naturally arises why was this bill incurred, and what good has come of such expenditure. "Shadowing" is practiced for two purposes: legitimately to obtain evidence of crime, illegitimately to manufacture evidence of crime. Of what crime have Dr. Ryfkogel and these United States officials been guilty, or what good reason was there of suspecting them of contemplating one? If these questions can not be satisfactorily answered there was no ground for the legitimate use of spies upon their movements. We do not say that the California authorities can not give a good reason, but what it is, is beyond the scope of our imagination. If they have none, the performance is a disgrace to them and an insult to respectable physicians as well as to a department of the public service of the United States.

UMBILICAL INFECTION WITH BACILLUS PYOCYANEUS IN THE NEWBORN.

In an epidemic of so-called umbilical sepsis in Berlin, involving eleven fatal cases, Wassermann[1] found in all umbilical arteritis, one or both arteries being filled with softened thrombi and pus up to their union with the hypogastric artery. In seven cases there was a metastatic focal pneumonia with hemorrhagic and cellular as well as fibrinous exudation, necrosis and abscess formation. In two cases there was an acute fibrinous pericarditis. In the last four cases the bacillus pyocyaneus was obtained in pure culture from the umbilical thrombo-arteritis and the pulmonary foci. This bacillus produced an inflammation around the umbilical arteries and a general infection after application in pure culture to the umbilicus of newly born guinea-pigs. It seems that a continuous grouping of umbilical sepsis like this described by Wassermann is practically a new observation. The constant involvement of the umbilical arteries, while the vein remained free, illustrates the previously noted predilection for infection of the arteries. Runge found the arteries involved 54 times in 55 cases of umbilical sepsis. The explanation given of this marked predominance of arterial infection is as follows: The infection begins in the perivascular tissue, whence it extends to the vascular wall; the connective tissue around the arteries at the umbilicus is double as thick as that around the veins, hence the much greater chance for infection of the arteries. Wassermann reviews the literature of pyocyaneus infections in man and shows that it is especially in infancy that the bacillus of green pus acquires special importance. The occurrence of eleven cases of umbilical sepsis within a period of about six weeks in one obstetrical clinic is in itself somewhat remarkable, and the more so as the cause seems to have been bacillus pyocyaneus. But Wassermann offers no explanation as to the probable mode of infection nor as to the source of the infectious agent.

THE YELLOW FEVER EXPERIMENTS IN CUBA.

The Caldas serum experiments in Havana appear to have come to an end in a way that is decidedly unsatisfactory to the discoverer of this alleged cure. According to the telegrams from Cuba the commission appointed to examine its merits has recommended a discontinuance of all experiments on the ground that Dr. Caldas keeps his discovery a secret, it is said, to favor a company which has been organized for its exploitation, that his claims that, the yellow fever agent is found only in the intestinal tract is not supported by other evidence of mosquito inoculation and direct blood inoculations, and lastly, that his attempt to immunize individuals against yellow fever by his serum has failed. As regards this point there is a question raised by Dr. Caldas; he denies the correctness of the diagnosis of yellow fever in the serum-treated patient by the American physicians. Against this alleged failure he claims a long record of successful experiments by himself and Dr. Bellingzaghi in Brazil and Mexico; hence, he considers the Cuban test inconclusive as regards the merits of the cure. It is hardly possible that there are any material differences between yellow fever in Brazil and Cuba, and that the experts in the latter country are less skilful diagnosticians than Dr. Caldas. His assertion also that the cases in Havana were all instances of blood poisoning from mosquito bites does not carry with it any inherent evidence of probability—accidents of that character do not happen so frequently. It does not appear that any prejudices on the part of the commission on account of his unethical secretiveness to the nature of his remedy stood in the way of their giving it the trial in which it has failed, and any complaint by him on that account is scarcely justified except indeed that he may claim that it was not complete enough. From the telegraphic dispatches it would appear that his methods were not such as to convince the commission of his genuine scientific spirit as an investigator, and the medical profession generally will pardon the members for not desiring to be utilized in furthering any commercial exploitation of a secret formula. If Dr. Caldas goes back discredited he will apparently have himself to thank for his ill fortune.

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[1] Virchow's Archiv, 1901, clxv, 342-364.

Medical News.

CALIFORNIA.

Santa Fe Hospital.—The Santa Fe system has decided to erect a hospital building in Los Angeles for the use of its employees.

Dr. Harkness' Estate.—The appraisement of the estate of the late Dr. Harvey Wilson Harkness, San Francisco, places its value at $29,343.

Tuberculosis Reports.—The Oakland Board of Health has adopted a resolution recommending an ordinance which will compel all physicians promptly to report cases of tuberculosis to the board.

Dr. Thomas W. Huntington, San Francisco, associate professor of clinical surgery in the Medical Department of the University of California, has been recently appointed professor of clinical and operative surgery.

To Isolate Consumptives.—Dr. John M. Williamson, president of the San Francisco Board of Health, in his annual report, recommends that a separate ward be constructed at the City and County Hospital especially for consumptives.

The new Emergency Hospital, Golden Gate Park, San Francisco, the foundation for which has just been laid, will be ready to receive patients, January 1, 1902. It will have a capacity of 60 patients and is expected to cost more than $8000.

San Francisco Deaths.—The report of the vital statistics for the year ended June 30, 1901, shows that 7008 deaths were registered. Of these 1107, or 15.8 per cent., were from tuberculosis; 713 from heart disease; 691 from pneumonia; and 573 from violence. Only 4877 births were registered during the year.

Personal.—Dr. Theodore F. Johnson, National City, has gone to San Francisco for two months of post-graduate work. ——Dr. Walter M. Boyd, Los Angeles, is dangerously ill with blood poisoning.——Dr. Harry Wilson, who served in Cuba and the Philippine Islands, has left the army and settled at Fresno for practice.——Dr. Herbert A. Johnston, Anaheim, has purchased a residence which he will maintain as a sanatorium. ——Dr. L. Franklin Dozier has been appointed resident physician at the State Hospital for the Insane, Napa, to succeed Dr. Alden M. Gardner.

COLORADO.

Typhoid at Denver.—The Arapahoe County Hospital is now full of typhoid fever patients. They are mostly from ranches or the mountains and not from Denver itself.

New Medical Licensees.—The Colorado State Board of Examiners passed upon and granted licenses to 268 applicants during the year ending June 30, 1901. Of these 232 were regulars, 28 homeopaths and 8 eclectics.

The Sanitary Bulletin of August 31 states that during the month of August, 71 cases of diphtheria, 104 of scarlet fever and 52 of smallpox were reported to the State Board of Health. This shows an increase over July of 5 cases of diphtheria and a decrease in scarlet fever of 142 cases and in smallpox of 11 cases.

CONNECTICUT.

Dr. William H. Barton, New Britain, has been elected pathologist and bacteriologist at the New Jersey State Hospital, Morristown. He will assume the duties of his new position, October 1.

Personal.—Dr. Myron P. Robinson, Terryville, has moved to Windsor Locks.——Dr. James Stretch, Meriden, has located in New Haven.——Dr. Louis E. Cooper, has been appointed medical examiner of Ansonia, vice Dr. William H. Cooper.

Mortality of Connecticut.—The Bulletin of the State Board of Health shows that by mortality reports received there were 1310 deaths during the month of August. This was 13 more than in July, and 332 less than in August of last year, and 151 less than the average number of deaths in August for the five years preceding. The annual death rate was 18.5 per 1000 for the large towns, for the small towns 13.8, and for the whole state 17.3. The deaths reported from infectious diseases were 423, being 32.2 per cent. of the total mortality.

ILLINOIS.

Diphtheria at Maroa has caused the closing of the public schools and churches.

Smallpox has been reported at Jimtown, near Berlin, Sangamon County; Delavan and Springfield.

Dr. Amos F. Moore, Dixon, has been commissioned assistant surgeon, with the rank of captain, and assigned to the Sixth Infantry, I. N. G.

Personal.—Dr. William T. Sloan, health officer of Peoria, has resigned, and Dr. William R. Allison has been appointed temporarily to the position.——Dr. Charles G. Rayburn, Roseville, has located in Kewanee.

Psychurgery.—The Elgin College of Psychurgery has been incorporated by three individuals said to be "doctors," but whose names have for some unexplained reason been omitted from the list of registered physicians of the state. The object of this "college" is to teach drugless healing.

Chicago.

Dr. P. J. H. Farrell has been commissioned major and surgeon and assigned to the Sixth Infantry, I. N. G.

Hold-Ups and Burglary.—Two physicians have been held up and robbed within the last week, and Dr. D. Lee Shaw lost property valued at $500 by a burglary, September 16.

Seven women physicians have been arraigned by the State Board of Health for practicing medicine without licenses and for advertising as physicians. Of these only one name appears on the physicians' register.

Banquet to Dr. N. S. Davis.—The following invitation has been sent out: "You are cordially invited to a banquet and memorial presentation in honor of Nathan Smith Davis, M.D., LL.D., in honor of his long and distinguished services in medicine in its every form of usefulness, to be given by the medical profession of America, in the banquet hall of the Auditorium Hotel, Chicago, Saturday, October 5, 1901, six o'clock p. m. The committee consists of Drs. Christian Fenger, J. H. Stowell, F. X. Walls, W. S. Haines, Edward F. Wells, and Arthur R. Edwards.

Personal.—Dr. Henry S. Zimmerman has bought the property of Dr. John A. Schreck, Cameron, and will locate there. ——Dr. Elmore S. Pettyjohn has returned from Europe and opened an office in suite 902, Stewart Building.——Dr. F. Gregory Connell is taking a month's trip to the Pacific Coast. ——Dr. Joseph M. Patton and family have returned from a two months' vacation in the Alleghenies.——Dr. and Mrs. Lewis L. McArthur have returned from their summer home at Mackinac Island.——Dr. and Mrs. Ralph E. Starkweather and Dr. John R. Neely registered recently at Buffalo.——Dr. and Mrs. Frank Allport have returned from a European tour of six weeks.——Dr. Frank Billings has returned from Mackinac.

IOWA.

The new Mercy Hospital, Fort Madison, was opened this week.

Dr. J. B. Wilson, Ottumwa, is suffering from a severe attack of appendicitis and is at the Ottumwa Hospital.

An emergency hospital is to be provided for Marshall County in Marshalltown. The supervisors have agreed to fit up and equip rooms and an operating room, and the city council of Marshalltown will co-operate.

Personal.—Dr. R. H. Graham has located in Davenport.—— Dr. R. V. Henry, Hedrick, expects to engage in practice in Kellogg.——Dr. N. A. Sloan has opened an office in Pella.—Dr. Francis A. Ely, Clarinda, has moved to Des Moines.——Dr. Joel E. Morrill, Hamburg, has located in Chapman, Neb.—— Dr. Fred J. Graber, Stockport, has moved to Fairfield.

KENTUCKY.

Dr. William Kenney, Paris, is suffering from appendicitis and has been taken to St. Joseph's Hospital, Lexington.

The Louisville Pathological Society resumed its monthly meetings on September 16, after a recess during the summer months.

Communicable Disease.—Smallpox has appeared at Oakdale, and typhoid fever is said to be epidemic near Pellytown, Adair County.

Dr. Matthew K. Gwyn, U. S. M.-H. Service, stationed at Louisville, has been ordered to Manila, where he will be placed in charge of one of the new quarantine stations.

The Conclave Emergency Hospital.—The field hospital at the Triennial Conclave of Knights Templar at Louisville, received and cared for about 40 cases on the day of the procession.

Dr. Ewing Marshall, Louisville, has been selected as medical director of the Interstate Fair. He will organize a medical corps which will attend to all emergency cases during the fair.

Sale of Cocain Prohibited.—The use of cocain and similar drugs has grown to such an extent as to render some action absolutely necessary, and the city council has passed an ordinance prohibiting the sale of such drugs, except on a physician's prescription.

Unlicensed Practitioner.—An individual who has been practicing medicine for two years at Holbrook, Grant County, and who is said to be a member of the North Kentucky Medical Society, has been found to possess neither a license to practice nor a diploma, and has been fined $50 and costs.

Organizing County Health Boards.—Dr. J. N. McCormack, Bowling Green, president of the State Board of Health, and Dr. William Bailey, Louisville, have made a tour of the state organizing county health boards. They visited forty counties and intend to organize a health board in every county in the state.

Personal.—Dr. J. Crittenden Jordan, Rocky Hill, has moved to Coral Hill.——Dr. W. V. Tucker is about to move from Greensburg to Huntsville, Kas.——Dr. Harry B. Kurtz has located in Garfield.——Dr. George B. Young, surgeon in charge of the U. S. Marine-Hospital, Louisville, has returned from his vacation in the East.——Drs. H. Horace Grant, P. R. Taylor and James Vance have just returned from a hunting trip in the wilds of Wyoming.——Dr. Thomas Hunt Stucky, the newly elected treasurer of the Mississippi Valley Medical Association, and Dr. Henry Enos Tuley, the re-elected secretary, have returned to the city from Put-in-Bay.

MARYLAND.

Mortality of Baltimore.—For the week ended September 21 there were 181 deaths, being an annual rate of 18.17 per 1000. The rate for whites was 15.16 and for the colored, 34.88. Births reported, 170.

Vaccination.—The Health Commissioner of Baltimore reports a perfect rush to be vaccinated and that the health wardens are overwhelmed with work. Over 1000 vaccine points were issued in one day last week.

A severe storm on September 15 did great damage to Monteone Hospital for the Insane at Frederick. A portion of the roof was carried away and 1500 window lights were broken. Some of the hailstones drove into the buildings, breaking mirrors and glassware. The stable was wrenched from its foundation, and the corn crop was ruined.

Personal.—Dr. R. Percy Smith, of Baltimore County, has accepted a position in Baltimore Medical College, and will hereafter make Baltimore his home.——Drs. Wm. Osler, Caspar T. Gilchrist and A. Aronsohn, Baltimore, have returned from Europe.——Dr. Louis Stick, resident, and Drs. Louis Rosenthal and Albert Conroy, assistant resident physicians at the City Hospital, have resigned.

Sewer System for Baltimore.—The mayor, in a message last week to the new city council, calls its attention to the act of the Legislature of 1901 empowering the mayor and city council to provide a general sewer system for Baltimore. In the interest of the health of the community he urges that the power thus conferred be at once exercised. The act requires that the question be submitted to the people of Baltimore by a city ordinance.

Appropriations for Charities.—The total amount asked for by the Department of Charities and Corrections, Baltimore, for next year is $340,220. Of this $119,400 is for the care of the insane, $62,000 for city patients in hospitals, $34,770 for destitute and neglected children, and $106,700 for the City Almshouse. At the latter institution there is room for only 360 insane, while 405 are being cared for, including 151 colored. An increase of $15,000 over last year for the insane and of $2500 for the case of the sick is asked for. The hospitals of the city now carry more charity patients at their own expense than ever before. The board proposes to investigate the financial condition of all patients, as many of them should properly be taken care of by their relatives.

MASSACHUSETTS.

Dr. Arthur R. Perry, city physician of Somerville, has resigned.

The City Emergency Hospital, Boston, will be ready to receive patients, October 1. It is a three-story building thoroughly equipped and with a roof garden, which is rather a novelty in a hospital.

Consumptive Hospital.—Boston has now $150,000 available for the erection of a hospital for consumptives. The mayor has sent to the city council a draft of an ordinance creating a new department to deal with chronic diseases, including consumption.

Personal.—Dr. Percy H. Brigham, Dorchester, has opened an office in Brockton.——Dr. Leslie H. Hendee, Palmer, has sold his practice to Dr. J. Homer Miller, Boston.——Dr. Joseph C. Boulay, Three Rivers, has moved to Ware.——Dr. Henry C. B. Snow, Ashland, Buzzard's Bay, has located in West Somerville.

Hospital Bequests.—By the will of the late Charles H. Hayden, Boston, $100,000 is given to the Massachusetts General Hospital and $50,000 each to the Children's Hospital and the Massachusetts Eye and Ear Infirmary. Clinton Hospital receives $2000 by the will of the late John W. McNamara, of Clinton.

MINNESOTA.

Hamline University, Medical Department, Minneapolis, held its opening exercises, September 18. Professor Charles F. Dight delivered the address.

Swedish Hospital.—The contract for the new Swedish hospital, Minneapolis, has been let for $24,000, not including the plumbing or the heating plant.

Dr. Robert I. Hubert, St. Cloud, has been bound over to the grand jury on the charge of having failed to report cases of contagious disease to the local board of health.

Smallpox is under control in the northern part of the state, but in the southern portion the disease is more prevalent. Dexter, in Mower County, and Okaberia, in Jackson County, have been placed under quarantine.

Personal.—Dr. Edmund B. Johnston, Fairmont, intends to locate in Benson.——Dr. Albert W. Shaw, Everleth, has gone to Buhl, where he has been appointed physician of the Drake and Stratton works, and also for several mines in the vicinity.

Seek Sanatorium Site.—Drs. H. Longstreet Taylor, St. Paul, George S. Wattam, Warren, and James L. Camp, Brainerd, the commission appointed by the governor to look for a suitable site for a state sanatorium for consumptives in the northern woods, is visiting Grand Rapids, Cass Lake and Bernidji.

MISSOURI.

Ensworth Medical College, St. Joseph, opened September 16, with an enrolment of 58 students.

Personal.—Dr. Irwin Phillips, Lead Mine, is seriously ill with blood-poisoning contracted during an operation in June last.——Dr. Charles E. Houser has moved from Gentry to Burlington.

Changes at State Asylum.—The board of managers of the State Hospital for the Insane, No. 3, Nevada, met September 3, and elected Dr. James W. Smith, Pleasant Hill, to succeed P. B. Stratton. Drs. L. M. Thompson, Atlanta, and J. M. Angle, Smithton, were elected assistant physicians.

MONTANA.

St. Peter's Hospital, Helena.—The work on the new $60,000 building for the hospital will begin soon.

New County Hospital.—The commissioners of Silver Bow County have decided to erect a new county hospital at Butte, to cost $20,000.

Personal.—Dr. Ellis P. Townsend, Billings, formerly local surgeon of the Burlington railway, has been appointed physician to the Crow Agency.

The Detention Hospital recently erected for Lewis and Clarke County, at Helena, at a cost of $4000, has been accepted by the county commissioners.

Railroad Hospital Enlarged.—The Northern Pacific Railway hospital, Missoula, has had an addition constructed which nearly doubles the capacity of the institution, and which will be ready for occupancy, October 1.

Vaccination Not Compulsory.—The attorney-general of the state has decided that the State Board of Health has no power to enforce vaccination of school children. If any authority exists it is under the general police powers of the state exercised for the purpose of preventing the outbreak of contagious diseases.

NEBRASKA.

Dr. B. B. Hauser, formerly located near Admah, has purchased the office and residence of Dr. William O. Wisner, Hooper, and will locate there.

Fatal Fire at Norfolk Asylum.—Eight of the eleven buildings of the State Insane Asylum were destroyed by fire, September 23. The building contained 300 insane people, seven of them women, who were rescued with the utmost difficulty. Two patients were fatally burned and a third was seriously burned and slightly injured. The fire was discovered about 3 o'clock in the morning in a subcellar, and burned slowly until about 10 o'clock. The entire building is gutted, but the walls are standing and apparently in good condition. The loss to the state is $150,000, with no insurance. The institution is situated two and a half miles from Norfolk and depends for fire protection upon its own water system. The supply of water gave out very soon after the pump was started, and from that time on the hospital force, together with the fire department and hundreds of willing spectators who had responded, were compelled to stand idle. The worthlessness of the fire protection at the institution has been repeatedly made the subject of reports by former superintendents, but legislatures have failed to act.

NEW HAMPSHIRE.

Dr. James T. Greeley, Nashua, secretary of the State Board of Medical Examiners, has sailed for Europe, where he will spend several months in study.

Personal.—Dr. Orlando B. Douglas, New York, who has spent his summers in Suncook for ten years, has opened an office in Concord.——Dr. E. L. Sawyer, Exeter, has sold his residence to Dr. Alice G. Chesley, and will retire from practice.

NEW JERSEY.

Typhoid fever is said to be epidemic in Dunellen.

Isolation Hospital for Newark.—The Common Council has voted $20,000 for the construction of a new isolation hospital for Newark.

Middletown's Pustulous Disease.—A contagious pustular epidemic disease has broken out in Middletown, which is declared not to be chicken-pox or smallpox. The disease is called new and mysterious.

Diploma Vendor Surrenders.—"Dr." J. W. Norton Smith, whose Central University of Medicine and Science in Jersey City, of which he was president, came into disrepute because it granted degrees of various grades at $5 apiece, or two for $7.50, and who has been wanted for almost a month by the police officials, surrendered himself, September 13. He was promptly arraigned in the First Criminal Court and released under $200 bail. It is expected that he will immediately call a meeting of the stockholders of his university and dissolve the institution. By this practical forfeiture of his charter, the university having been legally incorporated, the prospect of further harm in the matters of undeserved degrees will be wiped out and the case will be dropped.

NEW YORK.

French Hospital.—The French Benevolent Society is to build a hospital in New York City to cost $500,000. It will be a stone and brick structure, seven stories in height, absolutely fireproof, and will accommodate 150 patients.

Prof. Simon Harry Gage, Cornell University, gave some demonstrations, with a projecting microscope, before the Pathological Section of the Buffalo Academy of Medicine, of embryological specimens, including some abnormalities.

The Austro-Hungarian Hospital, with thirty beds and a dispensary, was opened for the reception of patients, September 16. The medical staff is composed of Drs. John Guthman, Ignatz M. Rottenberg, Max Landesmann, Bartholomew Lefkowics and others.

Personal.—Dr. Eugene E. Heriman, resident physician at the Albany County Hospital, has resigned.——Dr. Thomas Cunningham, interne at the Albany Hospital, has resigned on account of ill health, and Dr. Clayton K. Haskell, Saratoga, has been appointed his successor.——Dr. David R. Bowen, Wellsburg, will soon locate in Marcellus.

New Medical Directory.—The Medical Directory of New York, New Jersey and Connecticut for 1901, published by the New York State Medical Association, has just been issued. It comprises more than nine hundred pages, containing the names and addresses of physicians legally registered in New York, New Jersey and Connecticut, and much additional information valuable to the profession. The total number of names contained in the lists of physicians is 12,644, of which 10,112 are in New York, 1472 in New Jersey, and 1060 in Connecticut.

NORTH CAROLINA.

Smallpox is said to be raging in Granville County and quarantine has been established.

Transfer of Hospital.—The James Walker Memorial Hospital, Wilmington, has been formally transferred to the city and New Hanover County. Dr. Thomas Meares Green has been elected superintendent and physician in charge.

Personal.—Dr. R. T. S. Steele, Roberdel, has been appointed assistant surgeon of the Atlantic Coast Line with headquarters at Wilmington.——Dr. A. C. Woodruff, Sparta, has located in Independence, Va.

New School of Medicine.—The executive committee of the Wake Forest College board of trustees, which met at Raleigh recently to consider the question of the establishment of a school of medicine in connection with the college, has decided to postpone action in regard to the matter until next June.

NORTH DAKOTA.

Smallpox.—It is reported that eight cases of smallpox have developed among the laborers on the Northern Pacific Railway, west of Bowdon.——Carrington has one case of smallpox securely quarantined.

To Build Isolation Hospital.—Fargo and Cass County will, jointly, build an isolation hospital. It will be modern in every respect, with sewer and water connections.

Vaccination.—The Board of Education of Valley City has decided that pupils of the public schools must be vaccinated before being permitted to enter, unless satisfactory evidence is given that they have been properly inoculated heretofore.

OHIO.

Scarlet fever is reported to be epidemic in La Rue, and the schools of that village have been closed.

Medical Staff for Fall Festival.—The Medical Relief and Emergency Hospital of the Fall Festival, Cincinnati, will be under the charge of Dr. John L. Davis, medical director, assisted by eighteen physicians who have volunteered their services without pay.

More Room Needed.—The Protestant Hospital, Columbus, is so overcrowded that the trustees contemplate enlarging the hospital, and for the time being will obtain a house for the nurses, which will permit the fifteen rooms now used by them to be given to patients.

Personal.—Dr. J. Phil. Schilling has moved from Louisville to Canton, where he will be associated in practice with his son, Dr. Charles E. Schilling.——Dr. S. D. Good, Newton Falls, has sold his practice to Dr. H. McA. Mealy, of Palmyra, and will take six months' post-graduate work in New York.——Dr. Thomas A. Mitchell, Owensville, has moved to Cincinnati.

OKLAHOMA.

Smallpox has again appeared at Guthrie.

Certificates Granted.—As a result of recent examinations, the Superintendent of Health of the territory has granted certificates to practice to 27 practitioners.

Appointments.—Dr. Richard Foster, Hobart, has been appointed superintendent of the Board of Health of Kiowa County.——Dr. Richard W. Brown, Kingfisher, has been appointed superintendent of the Board of Health of Kingfisher County.

County Boards of Health.—The superintendent of the Territorial Board of Health has appointed practically all the members of the various county boards of health, and urges the necessity of a joint session to confer on measures against contagious disease.

SOUTH CAROLINA.

Rhett Memorial.—The friends of the late Dr. R. Barnwell Rhett, Jr., Charleston, propose to endow a room in the St. Francis Xavier Infirmary in memory of him, which shall be known as the Robert Barnwell Rhett room.

Personal.—Dr. James H. Downey has removed from Pacolet to Gainesville, Ga.——Dr. J. Mercier Green, Charleston, has been elected health officer, vice Dr. H. B. Horlbeck, deceased. ——Dr. William Mazyck has been elected dispensary physician of Charleston, vice Dr. Henry Horlbeck, resigned.

Decision on Medical Law.—In reply to a question regarding the eligibility to practice of a three-year graduate, the attorney-general has decided that the amendment to the medical law "does not refer to a graduate who has taken a four years' course, but refers to and is descriptive of a 'college which has a four years' course of instruction.' The limitation applies directly to the institution. When the college conforms to these qualifications and issues a diploma to a graduate, whether he has attended three years or five or six years, the mere granting of the diploma and the evidence of his standing having been made to the State Board of Examiners the graduate is exempt from the provisions of section 970, volume I. of the revised statutes of 1893, and the criminal statutes above cited do not apply to such a graduate."

SOUTH DAKOTA.

St. Luke's Hospital, Aberdeen, is practically completed and will be ready to receive patients in a few days.

Smallpox has broken out afresh on the Sisseton reservation and has been carried from there to Poplar Creek.

Dr. Tillison J. Wood, Huron, has been commissioned assistant surgeon in the South Dakota National Guard with the rank of first lieutenant.

Compulsory Vaccination.—The Board of Health of Mitchell has passed a resolution providing that all persons residing in the city of Mitchell, and all persons attending school in said city who have their homes elsewhere, shall be vaccinated as a preventive of smallpox before Oct. 1, 1901. Provided that all persons who furnish a physician's certificate of having had smallpox, or of successful vaccination, during the three years last past shall not be required to comply with this order.

TENNESSEE.

City Hospital to be Finished.—The Knoxville City Council has passed over the mayor's veto, an appropriation of $2000 to complete the new City Hospital, which will be ready to receive patients about October 15.

Oil vs. Mosquitoes.—The health officer of Knoxville has commenced a crude oil crusade against mosquitoes in and around Knoxville. He proposes to cover all pools with crude oil once a month until cold weather comes.

Gift for Meharry Medical College.—The Meharry heirs have pledged a gift of $10,000 for Meharry Medical College, Nashville, and have also promised to endow a ward in the new hospital to be built in connection with the college.

Communicable Diseases.—Scarlet fever has appeared in several localities in South Weakley County, in Side View, Sumner County and in Charleston. In the latter place the schools have been closed and a rigid quarantine instituted.—— Diphtheria is raging near Indian Mound, Stewart County. ——Whiteville has had three cases of smallpox of mild type.

Personal.—Dr. Frank A. Jones, Memphis, is convalescing at Tate Spring, East Tennessee.——Dr. Gideon H. Morgan, Rogersville, has moved to Fountain City.——Dr. Walter S. Nash has resigned from the chair of bacteriology in Tennessee Medical College, Knoxville, and has been succeeded by Dr. W. R. Lockett.——Dr. Howard Gunn, Gadsden, has located in Guntersville.——Dr. Marshall M. McRee, Trenton, has opened an office in Grapevine, Texas.

UTAH.

Dr. George W. Middleton, Paragoonah, starts for Europe this month to take post-graduate studies in Germany.

Salt Lake City Hospitals.—The St. Mark's and the Hospital of the Holy Cross are recipients of $10,000 each, given without conditions, by General Palmer and George F. Peabody. Four emergency hospitals are to be erected in the mining districts—one each at the Sunnyside, Castlegate, Winter Quarters and Clear Creek mines. For this purpose $20,000 has been donated by the former president and vice-president of the Rio Grande Western Railway, General William J. Palmer and George Foster Peabody.

VIRGINIA.

Smallpox.—Another case of smallpox has developed in Lynchburg, the first in several months.

A Pasteur department has been opened at the University College of Medicine, Richmond. It is in charge of Dr. Adolph G. Hoen, formerly of Johns Hopkins University, Baltimore.

Personal.—Dr. Thomas R. Marshall has returned to Bedford City after two years of service as surgeon of the Forty-first Volunteer Infantry in the Philippine Islands.——Dr. Samuel I. Conduff, Hollins, has moved to Salem.

New Physicians.—At the examination recently held at Staunton by the State Board of Medical Examiners, 102 applicants passed. Of these 28 were graduates of the University College of Medicine, Richmond; 18, of the University of Virginia, Charlottesville, and 22 of the Medical College of Virginia, Richmond.

WASHINGTON.

Unlicensed Practitioners.—Dr. W. H. Fahnestock, Walla Walla, and Dr. Edmund Bunton, Spokane, have been arraigned for practicing medicine without a license.

Personal.—Dr. Charles E. Case, Tacoma, has gone to New York to take a post-graduate course in medicine.——Dr. Ella J. Fifield, district supreme medical examiner of the L. O. T. M., has returned to Tacoma from Port Huron, Mich.

New Hospitals.—A permit has been issued for a three-story addition to Sacred Heart Hospital, Spokane, to cost $9000.——The directors of St. Luke's Hospital, Spokane, expect to begin work on the new $100,000 building this fall.—— Endowment of free beds at the Seattle General Hospital was secured at a mass meeting held recently at the Opera House, at which a handsome sum for this purpose was subscribed.

GENERAL.

Professor Czerny, of Heidelberg, is making a prolonged visit in the United States. He is at present in New York State.

Capt. H. Eugene Stalford, assistant-surgeon U. S. army, Manila, has been appointed attending physician to the civil employes of the Philippine Islands.

Isolation of Leprosy in Hawaii.—A stockade has been built around the buildings containing the lepers at Molokai Island. The Board of Health adopted this method to prevent relatives and friends from coming into personal contact with members of the colony.

Dr. Dedrick Left in the Arctic Regions.—Dr. T. S. Dedrick, of the Peary Arctic expedition, resigned, owing to a dispute with Lieutenant Peary, and went ashore at Etah, the headquarters of the North Greenland tribe of Eskimos and the farthest northern settlement. He refused to return to the arctic steamer *Erik*, and was supplied with arms and ammunition.

Beck's Letters from America.—The *Munich Med. Wochenschrift* is publishing a series of letters from Carl Beck, of New York, describing the St. Paul meeting of the American Medical Association and the medical trip to Yellowstone Park. They are bright and entertaining, and give a very good idea of the proceedings at the meeting and the views presented by men whose names are almost as familiar across the water as at home. He makes merry over the incident of the "Frauenrechtlerinnen and the canteen," which has particular zest for his German readers, as the "woman's rights movement" in any form meets but little sympathy from the profession there.

Dr. Rixey Surgeon-General of the Navy.—It has been reported that Dr. Presley M. Rixey, who during the last few months has become prominent as the physician of President and Mrs. McKinley, will be appointed surgeon-general of the Navy at the expiration of Surgeon-General Van Reypen's term of service. This will not be until Nov. 14, 1902, but his commission as surgeon-general expires December 28 next, and it is possible that Dr. Rixey's appointment may be expected then. Dr. Rixey has been the physician of President and Mrs. McKinley since 1898, succeeding Dr. Leonard Wood when the latter organized the rough riders. He was born at Culpepper, Va., in July, 1852, was graduated from the Medical Department of the University of Virginia in 1873, and entered the Navy as assistant-surgeon in January, 1874. For the first three years he was on various vessels belonging to European, South American and home squadrons, but since 1887 he has been on special duty in Washington nearly all the time.

The President's Case.

Trial of Czolgosz.—The trial of Czolgosz, the assassin of President McKinley, is now ended and the prisoner has been found guilty of murder in the first degree and sentenced to death. At the request of the Erie County Bar Association, Dr. Carlos MacDonald, New York, examined the prisoner and pronounced him sane. His sanity has been also proclaimed by Drs. Joseph Fowler, Floyd S. Creyo, and James W. Putnam, who examined him at the request of the prosecuting attorney. Dr. Harvey R. Gaylord was the first medical witness. He testified that he performed the autopsy and stated that back of the stomach was a track filled with dark fluid matter into which he could insert the tip of his finger. The pancreas was involved; the cause of death was the gunshot wound and the search for the bullet was not continued after the cause of death had been determined. He asserted that the stomach had been affected by the gangrene and that the kidney showed changes which could have been caused only by wounds during life. The wounds in the stomach were not necessarily the cause of death, but the fundamental cause was the absorption of the broken-down matter in the pancreas. Dr. Herman Mynter described the operation, which he, together with Dr. Matthew D. Mann, performed upon the President. After the wound in the stomach had been closed, as the President's temperature was rising, it was agreed by the physicians that the further course of the bullet should not be followed, and on their advice the President was removed to the residence of Mr. Milburn. Dr. Mynter stated the cause of death primarily as gunshot wound, but that it was directly due to blood poisoning from the absorption of poisonous matter caused by gangrene. He stated that the pancreatic fluid escaped, not by reason of direct injury to the pancreas, but by deterioration of the tissues surrounding it. He stated in addition that the physicians who performed the autopsy tried for four hours to locate the bullet and that the President's representative refused to allow the autopsy to proceed further or to permit more mutilation of the body, which would have been required. Dr. Matthew D. Mann, who operated on the President, testified that it would have been necessary to remove the bowels from the abdominal cavity in order to find the track of the bullet back of the stomach, and that this procedure would probably have resulted fatally, as the President had already begun to grow weaker as the result of the operation. He stated as the cause of death, gunshot wound in the stomach resulting from the bullet that passed through both the walls of that organ and lodged in the muscles of the back.

Bullet Not Poisoned.—The theory that the bullet causing the wound which killed President McKinley was poisoned or was steeped in a virulent culture of pyogenic bacteria, is disproven. City Chemist Hill, who holds the professorship of chemistry at the Medical Department of the University of Buffalo, reported to the prosecuting attorney that the bullets examined by him chemically and bacteriologically revealed nothing.

Examination of Cultures in Progress.—The examination by Drs. H. R. Gaylord and Herman G. Matzinger of the cultures taken at the autopsy on the President, as also of sections, is still in progress. As soon as completed the findings will be embodied in the official report of the case.

CANADA.

An examination for barbers is favored by the Trades Congress which has been in session at Brantford, Ontario, during the past week. The Federal Government will be petitioned to enact a law making it necessary for all barbers to procure a certificate of three years' apprenticeship and pass an examination before a board appointed by the government, and that the government establish a proper system of sanitary inspection for barbers' shops.

Prof. Goldwin Smith has donated $10,000 for the library of the University of Toronto. The gift is a timely one in view of the straightened circumstances of the university. The gift will manifest the esteem of Dr. Smith in the university and will also pay tribute to the memory of the restorer of English learning, the present time being the millenary of King Alfred, who is the patron hero and legendary founder of Professor Smith's old college at Oxford.

The Death of the President.—As evidencing the high esteem and affection felt for the sorrowing nation to the south of us, all Canada took on a mournful aspect on the day the body of the late Chief Magistrate of the United States was consigned to its final resting-place. Lord Minto, the Governor-General, by official proclamation, declared that the day should be solemnly observed throughout the Dominion and that His Majesty's subjects should abstain from all forms and sorts of amusement.

"Christian science" Suffers in the Toronto Police Court.—What is described as the hottest attack ever made on "christian science" in the city of Toronto took place on the morning of the 19th inst., during the preliminary investigation in a charge against a father that he had killed his little 6-year-old son by omitting to send for a physician when he was suffering from diphtheria. Police Magistrate Denison did his best to get a description of the "silent" treatment, but was unsuccessful. The crown attorney who was prosecuting the enquiry characterized the fake as follows: "I have no hesitation in saying that this 'christian science,' as set out in Mrs. Eddy's book, is the most damnable blasphemy I ever heard or read." The crown attorney then proceeded to read extracts from the book, when he was interrupted by the magistrate enquiring: "Is that woman still at large?" "Yes, she got this message from God copyrighted." "Oh," said the magistrate, "that shows she's sane enough in one respect." The magistrate and the crown attorney having strongly expressed themselves that this sort of treatment on young children must be stopped, the father was committed for trial at the coming sessions.

Royalty at McGill.—His Royal Highness, the Duke of Cornwall and York, opened the new medical buildings of McGill on the 19th inst. The formal proceedings were opened with an address from the Dean, Dr. Craik, who offered on behalf of the Medical Faculty, teachers, students and workers, a most respectful welcome to their Royal Highnesses. In this address Dr. Craik gave the history of McGill since 1824, when the total number of students was only 25. At the time of its incorporation with the University, the year 1829, the number had only reached 30. Last year the number of students enrolled was 490. In 1824, four professors comprised the teaching staff; now there are 70. The present new buildings are given to the staff by two members of Lord Strathcona's family, Lady Strathcona and the Honorable Mrs. Howard. At the close of the address, a little casket of the labradorite—a native Canadian metal from [illegible] a key of solid gold was presented to His R[illegible] Duke made suitable acknowledgment for the Duchess and himself, after which he declared the buildings opened for the work set apart for them. A visit to the Royal Victoria Hospital followed this function.

FOREIGN.

Contagious Diseases in London.—Smallpox appears to be increasing in London; there are about 200 cases isolated in hospital ships. Typhoid fever is quite prevalent, due, mainly, it is said, to infected suits of khaki brought from South Africa, either for sale or as family heirlooms.

Changes at the University of Leyden.—Professor Korteweg, of Amsterdam, has accepted the chair of surgery, vacant since the death of Van Iterson. Van Walsem, the prosector at the largest insane asylum in Holland, has been appointed successor to the late Siegenbeek van Heukelom, whose works on medical ethics and medical jurisprudence have won him a reputation. The first post-graduate course in Holland has recently been inaugurated at Groningen, and Leyden will soon have one.

Death of Dr. Thudichum.—Dr. J. L. W. Thudichum died in London, September 7, from cerebral hemorrhage. He was born in Germany, near Giessen, in 1829, and studied in that city and Heidelberg, graduating at the former university in 1851. He settled in London in 1853, and devoted his attention thereafter to chemistry. In 1865 he was appointed lecturer on pathological chemistry at St. Thomas's Hospital and director of its chemical and pathological laboratory. His publications are numerous.

Steffan's Title.—Dr. Steffan, by repudiating the title of Sanitätsrath offered him, has conferred a benefit on the entire profession in Germany. He repudiated the title on account of the assessed fee of 300 marks, and the official decree withdrawing the title states that the medical profession is called upon so often in matters of public health and has had such responsibilities and obligations placed upon it in the matter of contagious diseases and the public health in general, that its members are quasi-public officials to a certain extent, and consequently, henceforth, no assessment will be made when a title is conferred upon a physician, as when it is conferred upon a private individual.

Silver Jubilee of Prof. B. S. Schultze.—The pioneer of gynecology in Germany is celebrating this year his silver professional jubilee. The list of his works and articles on subjects connected with obstetrics and gynecology includes 139 titles. His large work on the "Treatment of Alterations in the Position of the Uterus" has been translated into several languages, and investigation by combined bimanual examination which Schultze and Hegar inaugurated, opened a new era in gynecology. He also called attention to the benefits of laminaria, and of exploratory tamponing for the detection of chronic endometritis with slight secretion. His "Manual of Midwifery" is in current use as a text-book in Russia, Spain, Italy and Roumania, as well as in Germany, where the twelfth edition has recently appeared. Schultze's name is best known, however, by his method of resuscitating apparently still-born infants, which is generally recognized as the most effective and most harmless method yet devised, as E. Fraenkel states in a review of his professional career, published in the last *Deutsche Med. Wochenschrift.* His father and older brother were both professors of anatomy.

LONDON LETTER.

Outbreak of Smallpox in London.

After enjoying practical immunity from smallpox for several years a severe outbreak has occurred. A week ago there were 15 cases on the hospital ships; now there are between 60 and 70. The outbreak has practically developed within the last seven days and so far has been confined to the northwestern district. Thirty cases have been notified in three days. The medical officers of health are taking every precaution to hunt up the cases and by careful disinfection to prevent the spread of the disease. In connection with this, as with a previous outbreak, the fact has become apparent that comparatively few medical men are competent to diagnose smallpox in its earliest stage, because the disease has become so rare that most of them have never seen a case. There has been only one death, and the outbreak is judged to be very mild. London is not regarded as a place of origin of smallpox and it is believed that this outbreak will be traced to some external source.

Koch Criticised.

A good deal of adverse criticism has been showered on Professor Koch since the Tubercu' hum. I the bride At the autumn conference of the Sanitary Inspectors' Association, which has just been held, Sir James Crichton Browne read a paper on "Tuberculosis." He said that the sound of Dr. Koch's voice had hardly died away in St. James' Hall when Lord Lister uttered words of protest. Since then there had been a steadily rising tide of opposition and a growing accumulation of evidence against Koch's doctrine. This great Nestor was premature in his announcement and unfortunate in the choice of an opportunity. The question would, he had no doubt, be settled by a government inquiry. Meanwhile, it would be wise for sanitary inspectors to act as if Koch had never spoken.

Prevention of Lead Poisoning in Pottery Glazing.

According to a report made to the government by Professor Thorpe, the use of raw lead compounds in glazing pottery is no longer necessary, and this source of lead poisoning can be eliminated. Fritted lead, which is produced by fusing silica or other material with raw lead so as to form a definite compound—silicate or boro-silicate of lead—answers all purposes. "Fritts" may be soluble or insoluble in acids. The former are little less poisonous or soluble than raw lead itself; the latter are almost innocuous. The proportion of lead in fritts may vary widely—from 15 to 55 per cent.—without any increase in the solubility of the lead. Thus, manufacturers of pottery have a considerable margin of choice in innocuous compounds. In 1899 special rules were proposed by the Home Office: 1, that lead shall be fritted; and 2, that the fritt shall be practically insoluble in acids. A maximum solubility of 2 per cent. was suggested. The manufacturers objected and complained that they were asked to accept conditions "never before employed by any potters in the world." But Professor Thorpe points out that this standard is reached without difficulty in large works abroad. Here as in other matters the unreasonable conservatism of the British manufacturer is the obstacle. But without doubt the result of this report will be that Parliament will compel him to use only fritted lead in glazing.

Paralysis after Dislocation of the Shoulder.

At the polyclinic, Mr. Hutchinson showed the following remarkable case: The patient was a boy, aged 16, who six months previously was caught in machinery and sustained a subcoracoid dislocation of the shoulder, which was reduced about two hours later without difficulty. Loss of power in the arm followed, from which he was slowly recovering. Three months after the accident there were anesthesia of the ulnar side of the hand involving the little and ring fingers, hyperesthesia in the median area, over-extension of the metacarpophalangeal joints and flexion of the phalangeal joints, paralysis of the ulnar interossei, inability to flex the fingers or bring them together, wasting of the thenar and hypothenar eminences, and inability to oppose the thumb to the finger-tips. Passive movement and massage were used. When the patient presented himself at the clinic there were almost complete paralysis and loss of sensibility in all the structure supplied by the ulnar nerve. The fingers were flexed on the palm but could be extended. The wrist was in a condition of partial drop but could be extended at will, though only feebly. Movements of elbow were free but flexion was accomplished almost entirely by the supinator longus, which was large and vigorous, the rest of the forearm being wasted. The triceps was also vigorous, but the biceps and trachialis anticus were very weak and atrophied. Sensibility was present in all parts except in the area of the ulnar nerve, but probably it was below normal everywhere. The muscles of the upper arm were weak, except the triceps and shoulder muscles.

Mr. Hutchinson pointed out that nothing in direct connection with the dislocation would explain the paralysis. Rupture of the circumflex nerve and paralysis of the deltoid sometimes occurred, but so long as the clavicle remained intact it was extremely improbable that the brachial plexus as a whole could be injured. He inquired minutely as to the nature of the injury. The lad said that a revolving wheel seized his coat and dragged on his arm and struck it with considerable force in the upper third on the inner side, where a large bruise followed. Mr. Hutchinson concluded that the nerve trunks in the upper arm were severely bruised, the ulnar nerve being almost disorganized, and the musculo spiral nerve being struck after it gave off its branch to the supinator longus. The incompleteness of the paralysis and the steady progress towards recovery fitted well with this suggestion. He referred to more or less similar cases of paralysis of the nerves of the arm after dislocation of the shoulder which had been recorded by Duchenne. But this writer gave no details of the nature of the injury which caused the dislocation, and though he was aware of the difficulty of explaining the paralysis and quoted Malgaine as to the impossibility of injuring the brachial plexus by a dislocation of the shoulder, he suggested no alternative hypothesis.

Eradication of Rabies from England.

According to the government report recently issued, "During 1900 no case of rabies was confirmed in England or Scotland, and it may be stated with some confidence that the disease which has been present for so many centuries has been eradicated." During the last four years rabies has been confined to the Welsh counties of Brecon, Caermarthen, and Glamorgan, in which six cases in dogs, four in cattle and one in a horse occurred. Credit for this splendid achievement is due to Mr. Walter Long, minister for agriculture, who has enforced an order for muzzling dogs in the face of much opposition. The gratitude due to him and the veterinary department is more apparent when it is remembered that in France 2000 to 3000 cases are annually reported, and that in Italy nearly five times as many cases were declared in 1900 as in 1899; that in Belgium the disease is on the increase; that in India and America it is still present.

Plague.

At the Cape, for the week ending August 17, only 3 fresh cases were recorded, 2 in colored persons and one in a native. The total cases up to August 17 were as follows: Cape Peninsula 357, Port Elizabeth 18, and all other places 2.

Correspondence.

The Septic Tank.

VANCOUVER, B. C., Sept. 14, 1901

To the Editor:—In your issue of August 24, you refer to the sewage disposal at Stratford, Ont., which I understand is by means of the septic-tank system. Your remark that this is the only system of its kind in Ontario, and probably in Canada, is not quite correct, for I am sure that the city of Vancouver, B. C., was the first to introduce it into the Dominion. The septic-tank system has been in operation in Vancouver for six months and is giving the very best satisfaction. The neighboring city of Victoria is also installing it, and Seattle, Wash., is observing its operations closely with the view of adopting it in the near future, if in further time its success is fully demonstrative, which I thing is certain. So many inquiries have been made at the City Hall here about the workings of it that our city engineer, Col. T. H. Tracy, has not time to answer them all, and has published the following pamphlet on the subject:

THE SEPTIC TANK.

The economical disposal of sewage is a problem which has engaged the attention of engineers and scientists for a great many years with varying results.

Sand filtration, sewage farming, chemical precipitation, bacterial filtration are the most notable processes tried and found wanting. The objection to each of these processes are briefly as follows:

Sand Filtration, continuous or intermittent.—The area of suitable sand ground required is usually difficult to obtain in the neighborhood of a city, and if obtainable the elevation or position is such as to necessitate pumping and consequent continuous expense.

Sewage Farming is growing into disuse for principally the same reasons.

Chemical Precipitation is expensive, both on account of the cost of the chemicals and handling and also the dealing with the "sludge" which is produced in excessive quantity. The effluent is also liable to become offensive.

Bacterial Filtration.—Considerable success has attended this method of treating sewage, but taken alone there are objections to it. In treating raw sewage the filters become clogged and require to be of considerable size and consequently expensive construction.

Septic Tanks.—The most effective method of treatment of sewage so far known is the Septic Tank, either used alone where the discharge is into salt water or where a high degree of purification is not necessary or in conjunction with bacterial filters where the effluent must be comparatively pure. The tanks are usually constructed of concrete, arched over and of a capacity equal to 18 to 24 hours' flow of sewage with a depth of about 5 feet, the inlet and outlet pipes being turned down to a depth of about 18 feet below the surface, so as to leave the scum, which forms on the surface, and in which the bacterial action is carried on, undisturbed. After the tank has been in use about a week a brown scum forms on the surface, which gradually increases, until the full action is attained. In this scum the action of what are known as anaerobic bacteria goes on, the greater part of the sewage being liquefied and a very small deposit resembling black ashes being deposited; that about 90 per cent. of the organic matter in suspension and about 30 per cent. of that in solution are removed and that the deposit does not require to be removed for several years. The practical result undoubtedly is that the offensive matter of the sewage is destroyed and the effluent is sufficiently clear for discharging into salt water or where a high degree of purification is not necessary.

Where discharged into a running stream or where greater purification is desirable a small bacterial filter or set of filters may be added. In such a case much smaller area of filter is necessary than if filters alone are used, as the effluent from the septic tank will go through at least four times as fast as the raw sewage, and the filter beds are not liable to be clogged.

The Vancouver Septic Tanks are three in number, designed for populations of 5000, 3000 and 2000, respectively, and were constructed in 1900 from plans furnished by the Septic Tank Syndicate, the first being put in operation about Jan. 1, 1901, and the others a month or two later. The results so far (August) are quite satisfactory, though the quantity of sewage passing through is not such as to make the conditions most favorable for the development of bacterial action. In one of the tanks near the Crematory the scavengers have been dumping night soil to the extent of five or six loads a night, and, though the last tank to be put in operation, the effluent is the clearest.

There have been no analyses yet made, either of the sewage or the effluent, but the practical effect of the bacterial action is very apparent. There is no smell from the tanks or the effluent. The earth has been filled over the tanks, leveled and seeded, so that the appearance of the surface is not unsightly or offensive in any way.

Some slight changes have been made in the plans furnished by the Syndicate; in order to avoid the use of wood covering for the inlet and effluent channels the concrete walls having been continued up and arched over, leaving only the necessary manholes appearing on the surface.

The above is a report I obtained to-day from our city engineer. Yours respectfully, W. J. McGuigan, M.D.

Value of Rest in Pulmonary Tuberculosis.

Colorado Springs, Colo., Sept. 13, 1901.

To the Editor:—A very interesting letter from Dr. Chas. Denison appears in the columns of The Journal, of August 31.

It seems to me, however, that he, as well as many others who speak of the treatment of pulmonary tuberculosis, voices a deeply-rooted error when he says in the concluding paragraph of his letter "they are all coming around to the same belief . . . *namely, pure air and an active* (italics mine) outdoor life in that climate where it can be had the easiest and most comfortably."

Having myself been the victim of pulmonary tuberculosis for more than seven years past and becoming thereby deeply interested in all that pertains to the therapeutics of this disease and watchful of all procedures for its amelioration in others as well, I feel that the subject of exercise in this condition ought to be settled without much difficulty. In no other form of tuberculosis is an active functionating of the part affected permissible. In tuberculosis of hip, knee, spine or any other joint, rest is of prime importance. In glandular tuberculosis anything like massage is contra-indicated, and who would be daring enough to advocate systematic thinking as a therapeutic measure in tubercular meningitis?

If once a clear conception of the difference necessary in outlining treatment for those predisposed to tuberculosis and those who already have it actively present is grasped, I believe the present haziness on the subject of exercise will disappear.

As a prophylactic measure in those who by reason of inheritance, environment or poor anatomic development are predisposed to pulmonary tuberculosis, exercise of the chest and lungs is of undoubted advantage. When, however, an active process is present in the lungs the quieter such organs can be kept the better.

Soft, weak muscles are made firmer and stronger by systematic exercise. If such muscles become the seat of an inflammatory action no sane physician would prescribe exercise in any form for them.

I fail to see why the analogy is not fairly applicable to the lungs. If the lungs are sluggish, the pulmonary breath sounds are feeble, especially if the chest is contracted and the family *history for pulmonary troubles is bad, by all means prescribe* graded and systematic pulmonary gymnastics; but, on the other hand, when tuberculosis has already started in the lungs let us follow the rational methods used for treating tuberculosis elsewhere, *by putting the lungs as nearly at rest as possible.* I am well aware that not infrequently but one lung is affected, and when this is the case pulmonary gymnastics, while benefiting and strengthening the healthy lung, damages the one that is diseased, and occasionally the benefit is greater than the detriment. I am, however, strongly of the opinion that generally in such cases *the evil exceeds the good.*

Full diet, fresh air, day and night, careful attention to the hygiene of skin and bowels, and rest, including a large amount of sleep (ten hours or more), with occasional counter-irritation to chest and otherwise symptomatic treatment when called for, sums up, it seems to me, what may be termed a safe basis for the treatment of pulmonary tuberculosis.

I may add that these are not merely theoretical considerations but are the results of observations on many afflicted, myself included. Truly yours, W. F. Martin, M.D.

A Use for Criminals.

Palmerston, Ontario, Sept. 20, 1901.

To the Editor:—President McKinley has been laid to rest and his assassin remains to be dealt with by the law as a nuisance to society. Before he is executed might he not be used for some useful purpose? Recent investigations in tuberculosis and cancer, two of the world's greatest scourges, have shown the necessity of the use of a human subject for further research. Already a physician has offered himself as a subject to test whether bovine tuberculosis is transmissible to man. The necessary experiments would not entail any great suffering on the criminal, and public opinion generally would be thoroughly in accord. I can see no objection to this use of desperate criminals. This practice was in vogue when Jenner introduced vaccination to the world, but in the nineteenth century seems to have fallen entirely into disuse. W. R.

Nerve Nostrums and Their Dangers.

Sonyea, N. Y., Sept. 21, 1901.

To the Editor:—The undersigned is preparing a paper on "Nerve Nostrums and Their Dangers," by request of Dr.

George F. Butler, Chairman of the Section on Materia Medica, Pharmacy and Therapeutics, of the American Medical Association, for the June, 1902, meeting, and would be glad to have physicians and others send him samples or literature of such nostrums coming under their notice, or tell him of them and where they may be procured.

Wm. P. Spratling, M.D.,
Craig Colony for Epileptics, Sonyea, N. Y.

Married.

George Mason Cheevy, M.D., to Miss Lucy Morris Ellsworth, both of New York, September 12, at New Hartford.

Emil Grasser, M.D., to Miss Bessie Clay, both of Louisville, last April.

Franklin Jerome Hall, M.D., Dallas, Tex., to Miss Rowen Mary Russell, Winchester, Mass., August 28.

John T. Hubel, M.D., to Miss Mary Engle, both of Detroit, Mich., September 2.

Lee Weber, M.D., Davenport, to Miss Annie Louisa Corner, Des Moines, Ia., September 12, at Des Moines.

William B. S. Richardson, M.D., to Miss Birdice Blye, both of Chicago, September 18.

Howard A. Ijams, M.D., to Miss Mae Armstrong, both of Knoxville, Tenn., September 12.

W. H. Jones, M.D., to Miss L. E. Griffitts, both of Unitia, Tenn., September 7.

Leroy W. King, M.D., to Miss Marion Allen, both of Lowville, N. Y., September 13.

George L. Marion, M.D., Elgin, Ill., to Miss Berg, Chicago, September 3, at the home of the bride.

Joseph A. Morris, M.D., Wilton, N. C., to Miss Lizzie Reid Martin, at Roanoke, Va., September 3.

Ernest S. Reedy, M.D., to Miss Josepha Mae Ator, both of Bloomington, Ill., September 5.

Jay G. Roberts, M.D., to Miss Louise Carnahan, both ot Hastings, Neb., September 4.

F. Conger Smith, M.D., New York, to Miss Kate Comstock, Topeka, Kan., September 3, at the home of the bride.

James E. Taylor, M.D., to Miss Martha J. Neal, both of Richmond, Ind., September 12.

E. Otis Smith, M.D., to Miss Eugenia Bradley, both of Cincinnati, September 4.

William Sidney Thayer, M.D., to Miss Susan C. Read, both of Baltimore, September 3.

George Halleck White, M.D., to Miss Harriett King Ricker, both of Rochester, N. Y., September 5.

Leopold Schiller, M.D., to Miss Charlotte Miller, both of Milwaukee, September 24, at the home of the bride.

Deaths and Obituaries.

William F. Holt, M.D., Jefferson Medical College, Philadelphia, 1857, who had gone to New York for medical treatment, died suddenly at that place, September 10, aged 65. He was born in Georgia, educated at the State University and had been in active practice at Macon for the last forty-four years, with the exception of the time he served as a surgeon in the Civil war. He was several times chosen president of the Georgia State Medical Association, having first been elected in 1882, and in 1890 was a delegate to the International Medical Association, which met at Paris that year. He was for ten years a member of the Board of Education, served for twenty-three years as physician for the Academy for the Blind, and was physician for the Methodist Orphans' Home for twenty-five years. He had served as chairman of the medical board of the City Hospital since its organization, and he was a member of the American Medical Association. The Macon Medical Society met and voted to attend the funeral in a body and to devote the next regular meeting to a memorial meeting in his honor.

Josias A. Ireland, M.D., Kentucky School of Medicine, 1851, died at his home in Louisville, September 20, from arteriosclerosis, aged 77. For the past fifty years, up to his retirement from active practice, he had been a prominent member of the medical profession in Louisville, having been president of the Mississippi Valley Medical Association in 1879, and one of the founders of the Louisville Medical College, of which he was dean and professor of gynecology for a number of years. He was also a member of the American Medical Association, American Public Health Association, and the Kentucky State and Medico-Chirurgical societies.

Benjamin M. Failor, M.D., Jefferson Medical College, Philadelphia, 1855, while returning from a night call, September 12, at Newton, Ia., where he had practiced for the past thirty-five years, was assaulted by robbers and died a few hours later as the result of his injuries. He was a native of Bucyrus, Ohio, and was a surgeon in an Ohio regiment during the Civil war. He was 76 years of age, and for a number of years had been Grand Surgeon of the Iowa department of the G. A. R.

R. Berrien Burroughs, M.D., Jefferson Medical College, Philadelphia, 1856, died, after a long illness, at Norfolk, Va., September 11, aged 68. He was born at Savannah, Ga., and educated at the University of Georgia. During the Civil war he served as surgeon in the 63d Georgia Infantry and the 4th Georgia Cavalry; at the time of his death he was chief surgeon of the Florida Division of the United Florida Veterans. At one time he was president and again vice-president of the Florida State Medical Association.

John K. Boude, M.D., University of Pennsylvania, Philadelphia, 1857, who for the past twenty years had been a member of the Board of Pension Appeals, died at Ocean Grove, N. J., September 8, aged 69. He was born and educated in Ohio, graduating from Miami University. He was an assistant surgeon of the 118th Illinois Infantry, having taken up practice at Carthage, Ill., and served through the Civil war with that regiment.

R. Bruce Wallace, M.D., Jefferson Medical College, Philadelphia, 1868, died suddenly at his home in Union, Neb., September 16. He was born in Missouri and moved to Union in 1887, after practicing for a time in Wyoming. He was a member of the Otoe County Medical Society, of which organization he was a number of times president.

Thomas A. Graham, M.D., Medical College of Ohio, Cincinnati, 1871, University of Louisville, 1872, died from Bright's disease at his home in Jeffersonville, Ind., September 14. He was a member of the Jeffersonville Board of Health, and at one time was a member of the Indiana legislature.

James W. Adams, M.D., University of Michigan, Ann Arbor, 1868, died at his home in Des Moines, Ia., September 13. He was born near Danville, Ind., and served with the 7th Indiana Infantry during the Civil war, enlisting as a private and being promoted to lieutenant.

Samuel C. Edmonds, M.D., University of Pennsylvania, Philadelphia, 1851, died at his home in Linwood, N. J., September 16, aged 72. He had practiced medicine along the coast in his county for the last fifty years.

W. T. Eignus, M.D., Rush Medical College, Chicago, 1901, who was a member of the staff of the State Insane Hospital, was drowned, September 19, by the capsizing of his skiff while hunting near Kankakee, Ill.

George W. Delap, M.D., Long Island College Hospital, New York, 1885, a deputy coroner of Brooklyn, N. Y., died at his home in that city, September 13.

Jacob Sell, M.D., Western Pennsylvania Medical College, Pittsburg, 1889, died from typhoid fever, September 10, at his home in Greensburg, Pa., aged 39.

Solomon G. Carpenter, M.D., University of the City of New York, 1845, died at his home in Chester, N. Y., September 13, aged 76.

Samuel W. McMahan, M.D., Medical College of Indiana, Indianapolis, 1879, died, after an illness of three months, at his home in Indianapolis, September 11, aged 55.

Nathaniel S. Cheeseman, M.D., Albany Medical College, 1860, died at his home in Scotia, N. Y., where he had practiced for the past thirty years, September 12, aged 67.

D. E. Newcomb, M.D., Detroit Medical College, 1885, died at his home in Carleton, Mich., September 16, as the result of a stroke of paralysis.

Charles E. Hollenback, M.D., Bellevue Hospital Medical College, New York, 1874, died at his home in Halsey Valley, N. Y., September 13, after a brief illness, aged 51.

Samuel M. Forrest, M.D., Medical Department of Washington University, St. Louis, 1877, died at his home in Renick, Mo., September 3, aged 57.

Henry A. Lamb, M.D., Vanderbilt University, Nashville, 1901, died at his home in Portland, Me., September 16, aged 24.

Book Notices.

The Medical Directory of New York, New Jersey and Connecticut. Volume III. Cloth. Pp. 914. Price, $2.50. Published by the New York State Medical-Association. 1901.

The third volume of this excellent Directory is not only fully equal to the two preceding issues, but seems to be even better. While the verification of the exactness of such a book is practically impossible, except by long use, the tests we have been able to make of it have shown that it is perfectly reliable. In this issue is incorporated the names of all legally registered physicians, without regard to school of practice, which, as we understand it, has not been the case with the former volumes. This is certainly commendable. One of the functions of the New York State Medical Association is the prosecution of illegal practitioners; hence, it is important to know who have the right to practice. According to the Directory, New York State has 10,112 physicians, New Jersey 1472, and Connecticut 1060. The arrangement of the book is different from that of former issues in that all the information pertaining to each state is grouped by itself and a distinctive colored paper is used for each, so that ready reference is easy. Brooklyn is made distinctive from New York City by yellow paper being used instead of white. This, as well as in everything that the Committee has done, seems to have been with the view of making the Directory not only reliable but practical in every way. A large amount of information is given in regard to societies, hospitals, medical colleges, etc. The medical laws of New York, New Jersey and Connecticut are given in full, as well as the names of the boards of examiners, Board of Regents, etc., and other information of value to all who are now members of the profession of the three states covered. Besides the list of physicians arranged alphabetically there is also a street list, a valuable but a laborious part to arrange, the summer residences of physicians who have them, etc. The book has been well gotten up and is a credit to the Committee of the New York State Medical Association, that must have worked indefatigably to accomplish the task it assumed when it undertook to get up a directory of the Empire State, as well as of the two adjoining smaller states. The Committee should be encouraged in its work in every way possible. Every physician in the states of New York, New Jersey and Connecticut certainly will be interested enough in the Directory to obtain a copy.

Epilepsy and Other Chronic Convulsive Diseases; Their Causes, Symptoms and Treatment. By Sir William R. Gowers, M.D., F.R.C.P., F.R.S., Consulting Physician to University College Hospital. Second Edition. Cloth. Pp. 320. Price, $3.00. Philadelphia: P. Blakiston's Son & Co. 1901.

The early edition of Gowers' work on epilepsy was a standard work and the present one will take its place, in all respects. The statistical basis for the more general facts of the disease have been greatly enlarged and a large amount of work has been done in revision and addition to the text. The author's well-known standing as a neurologist gives weight to whatever he may say. Nevertheless, one or two minor points may be mentioned; he repeats the time-honored statement that unconsciousness is an invariable attendant on major attacks, though there is considerable evidence extant that it may not be invariable, and he is guilty of a little inconsistency when he says later that little is known of the sensations that attend severe convulsions since the patient is almost always unconscious. Dr. Gowers considers that the spontaneous cure or cessation of attacks does sometimes occur and is probably of greater frequency than writers on the condition have usually admitted, but it is not sufficiently common to be recognized as a particular element in the prognosis. In this he apparently fails to consider a large number of cases where epilepsy is a merely accidental or temporary episode in the patient's life. There are many people who under certain stress have one or more epileptic attacks, which are never repeated and the number of such is, we think, rather greater than he seems to admit. Sometimes this cessation may be due to treatment, but sometimes it is spontaneous. He also seems to underrate the danger to life from epileptic fits, though he may possibly be correct in estimating the number of such accidents as small when taken in comparison with all cases of epilepsy. If the records of insane hospitals were studied it will be found that epilepsy is a very serious matter as regards the possibility of sudden death, and in all cases it seriously complicates conditions that might not be fatal without it. In the main, however, the work is one that can be safely followed and is perhaps one of the best monographs on this disease or symptom that exists.

Les Sourds-Muets en Norvege. La Surdi-Mutité, sa Distribution, ses Causes ses Symptoms. Son Rapport avec les Unions Consanguines, Conditions Sociales des Sourds-Muets; avec Remarques sur la Diagnose, la Prophylaxie et le Traitement de la Surdi-Mutite. Par V. Uchermann, Professeur à l'Université de Christiana. Publie par les soins de L'Etat. *Première partie (texte); et 2ième partie (annexe);* 116 Tableux, 2 Cartes, 1 Annexe (Cartes). Traduit du Norvegien Par Joahim Nicolaysen et Theophile Chauvin. Cloth. Pp. 550. Christiana: Alb. Cammermeyer, Editeur. 1901.

This is a most exhaustive study of deaf mutism in Norway covering the subject in all its possible relations, and discussing the theme with reference to nearly all the European literature of note on the subject. Norway would appear to afford a specially favorable field for such a study, not particularly on account of the frequency of this defect, but because of the peculiar distribution of a comparatively limited population in isolated communities often remote from routes of transportation and yet with reliable registration. The study is of especial interest therefore as giving a discussion of some questions of the etiology of deaf mutism, idiocy, etc., from data particularly adapted to throw light upon them. Among these are the questions of the effects of consanguinity of parents, which must be frequent in the isolated communities of Norway, and the effects of heredity generally in the production of these degeneracies. All these matters are very thoroughly discussed and the work will be an important one for reference on such facts. Every other etiologic factor seems also to have been taken up and judiciously handled, both as regards the analysis of the special statistics and their comparison with other data gathered elsewhere. Heredity and consanguinity, social conditions, syphilis, leprosy, age of parents, geology and climate, water supply, etc., are all considered and treated of at length. The work contains elaborate charts showing the distribution of deaf mutism, etc., in Norway, and in a supplementary volume what appears to be a complete list of the cases with a number of very interesting family trees showing the effects of heredity and intermarriage, etc. The work in its way is a monumental one that takes an important place in the literature of its subject, and in this French translation will widely extend its usefulness.

Hygiene and Public Health. By Louis Parkes, M.D., D.P.H., Lond. Univ., and Henry Kenwood, M.B., D.P.H., F.C.S., Fellows of the Sanitary Institute and Members of the Board of Examiners. With Illustrations. Cloth. Pp. 732. Price, $3.00 London: H. K. Lewis. Philadelphia: P. Blakiston's Son & Co. 1901.

This work appearing externally under the same title as the well known Parkes Hygiene so long before the profession, is really a new work under joint authorship in which the older one has been taken for a basis. The book is condensed in style and while specially adapted to English readers is nevertheless one that will be of value to students of hygiene in any part of the world. It has been written especially for English practitioners who are studying for the various public health diplomas, but its convenience as a reference book to others is not lessened thereby. The views of the authors on certain subjects, as for example, the use of alcohol, etc., are those that have been held in the past and not in all respects what modern reformers would advocate, that is to say they do not go to extremes. On the whole, the work will be found to be a very safe guide and a very handy reference book for the physician.

A Guide to the Clinical Examination of the Blood for Diagnostic Purposes. By Richard C. Cabot, M.D., with Colored Plates and Engravings. Fourth Revised Edition. Cloth. Pp. 494. Price, $3.25. New York: Wm. Wood & Co. 1901.

This fourth edition of Cabot's work has been almost entirely rewritten. The section on serum diagnosis has been abridged and the table of contents abbreviated so that the book is not greatly increased in size. It has apparently been brought up to date, though some of the very latest researches in regard to blood diagnosis do not appear to be mentioned. Like the former editions, it is handsomely presented to the profession and will undoubtedly retain the favor with which it has heretofore been received.

Societies.

COMING MEETINGS.

Utah State Medical Society, Provo City, Oct. 1-2, 1901.
Idaho State Medical Society, Pocatello, Oct. 3-4, 1901.
Tri-State Medical Society of Alabama, Georgia and Tennessee, Nashville, Tenn., Oct. 8-10, 1901.
Wyoming State Medical Society, Evanston, Oct. 8-9, 1901.
Vermont State Medical Society, Montpelier, Oct. 10-11, 1901.
New York State Medical Association, New York City, Oct. 21-24, 1901.
Medical Society of Virginia, Lynchburg, Nov. 5-7, 1901.
Oklahoma Territory Medical Association, Oklahoma City, Nov. 13, 1901.
Southern Surgical and Gynecological Association, Richmond, Va., Nov. 19, 1901.

Huntington County (Ind.) Medical Society.—This Society held its annual meeting at Huntington, September 17. Dr. Charles L. Wright was elected president, and Dr. Erwin Wright, secretary and treasurer, both of Huntington.

Louisville Society of Medicine.—At the annual meeting of this Society, held September 12, Dr. Walker B. Gosset was elected president; Dr. Thomas A. Hays, vice-president; Dr. Waller O. Green, secretary, and Dr. A. Henry Falconer, treasurer.

Knox County (Tenn.) Medical Society.—At the annual meeting of this Society, held at Knoxville, September 5, the following officers were elected: Dr. C. P. McNabb, president; Dr. J. M. Kennedy, vice-president; Dr. A. D. Scruggs, secretary; and Dr. E. R. Zemp, treasurer.

Syracuse (N. Y.) Hospital Association.—At a meeting of this Association, held at Syracuse, September 5, a permanent organization was effected and the following officers elected: President, Dr. Nathan Jacobson; vice-president, Dr. Frederick R. Hazard, and secretary-treasurer, Dr. George M. Price, all of Syracuse.

Douglas County (Minn.) Medical Society.—The annual meeting of this Society was held, August 4, and the following officers elected: Dr. Herbert J. Orchard, West Superior, president; Dr. A. W. James, Solon Springs, vice-president; Dr. Louis Moody, secretary, and Dr. P. G. McGill, treasurer, both of West Superior.

Montour County (Pa.) Medical Society.—At the annual meeting of this Society, held at Danville, September 4, the following officers were elected: President, Dr. T. B. Wintersteen; vice-presidents, Drs. G. A. Stock and E. A. Smith; corresponding secretary, Dr. Ida Ashenhurst; recording secretary, Dr. J. R. Kimerer, and treasurer, Dr. P. C. Newbaker.

International Congress of Nurses.—The week ending September 21 marked a very successful meeting of this Congress at the Pan-American Exposition. Saturday was set apart by the management as Nurses' Day, and the close was the occasion of a reception given at Castle Inn by the local nurses' societies. The attendance was good throughout the meeting and much interest was shown in the papers.

National Association of Hospital Superintendents.—At the meeting of this Association, held in New York City, September 12, the following were elected for the ensuing year: Dr. J. T. Duryea, Kings County Hospital, president; Dr. Charles O'Reilly, Toronto General Hospital, vice-president; A. D. Shaw, Harper Hospital, Detroit (re-elected), treasurer, and Dr. D. T. Test, Pennsylvania Hospital, Philadelphia, secretary.

American Academy of Railway Surgeons.—At the annual business meeting of the Academy, held in Chicago, September 13, the following officers were elected: Dr. August F. Jonas, Omaha, president; Drs. Luther Sexton, New Orleans, and William H. German, Morgan Park, Ill., vice-presidents; Dr. Thomas B. Lacey, Council Bluffs, secretary and treasurer, and Dr. R. Harvey Reed, Rock Springs, Wyo., editor. The Academy meets in 1902, at Kansas City, Mo.

Rockland County (N. Y.) Medical Association.—On September 6, at Hotel St. George, Nyack, N. Y., the members of the Fifth District Branch met and organized this Association, by the adoption of by-laws and the election of the following officers: President, Dr. George Blauvet, Nyack; vice-president, Dr. D. V. Van Wagenen, Suffren; secretary-treasurer, Dr. N. B. Bailey, Haverstraw; fellow, Dr. S. W. Toms, Nyack, and alternate, Dr. Charles D. Kline, New York. Addresses were made by Dr. John A. Wyeth, president of the New York State and the American Medical Associations; Dr. Edmond L. Cocks, secretary of the Fifth District Branch of the New York State Medical Association; Dr. C. E. Dennison, treasurer New York County Medical Association; Dr. J. W. S Gouley, New York City; Dr. Milton C. Conner, Middletown, and Dr. C. S. Payne, Liberty, president of the Sullivan County Medical Association. The enthusiasm of the members of the regular profession in the work of the New York State Medical Association in the county, is shown by the fact that of the twenty-four practicing physicians in the locality, eleven have already become members of the Association and eight of the others have signified their intentions of doing so at an early date.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Twenty-seventh Annual Meeting, held at Put-in-Bay Island, Ohio, September 12, 13 and 14, 1901.

President Dr. A. H. Cordier, Kansas City, Mo., in the Chair.

President's Address.

Dr. A. H. Cordier selected for his subject "Some Phases of Nephrolithiasis." He drew the following deductions: 1. Hemorrhage from parenchymatous organs is, in most instances, easily controlled. 2. Nephrolithiasis is more prevalent than is generally supposed. 3. A stone having formed in the pelvis of the kidney, if too large to pass through the ureter, will sooner or later produce symptoms demanding its removal. 4. Suppuration in stone cases is, as a rule, a late process and should be prevented by early surgery. 5. A wound in a healthy kidney heals rapidly. 6. Obscure, persistent pains in the region of the kidneys, in a patient who has had a renal colic years ago, should lead to an exploration of the kidney. 7. The operation of nephrolithotomy has a very low mortality. 8. The kidney should not be removed unless practically destroyed by the disease. 9. There exists a special cause for the development of stones in the right kidney. 10. With a carefully obtained clinical history, the diagnosis of stone in the kidney is usually easy. 11. At the time of operating the ureter should be explored, that its patency can be assured. 12. Post-operative patience and faithful effort on the part of the surgeon will result in the saving of many organs; otherwise removal will be necessary.

Fractures.

Dr. E. B. Smith, Detroit, read a paper on this subject. He gave a résumé of the old and new methods in diagnosing fractures. He said that fractures in each stage presented certain definite pathological surgical conditions. The diagnosis, treatment, prognosis, complications with their medico-legal status were dwelt upon at length, and lesions examined, treated, and met by surgical experience.

Dr. A. M. Hayden, Evansville, said a joint that has a fracture into it should be kept quiet or immobilized for at least four or five weeks, so that the fragments may become thoroughly united and healed before resorting to passive motion. Passive motion was used too early.

Dr. W. T. Stewart, Chicago, spoke of suturing the fragments in fractures, saying he had been disappointed in using the various methods recommended in text-books and journal literature, and expressed the hope that some member would speak of immobilization of parts in delayed union of fractures, and in fractures of recent occurrence.

Dr. S. S. Thorn, Toledo, said one cause of delayed union in fractures was malnutrition, the result of enforced anemia, and this anemia was the result of applying bandages too tightly and the use of short splints, thereby causing constriction, which resulted in anemia, starvation, and hence delayed union.

Dr. A. J. Ochsner, Chicago, mentioned the interposition of muscle or fascia between the fragments as another cause of non-union of bone, and cited cases in point.

Dr. A. M. Phelps, New York, spoke of a third reason why union did not take place after a fracture of the thigh—the nutrient artery became ruptured, and thus nutrition was cut off. Treating fracture with coaptation splints was wrong. He favored extension (Buck) and fixation in fractures of the femur. A patient with a fractured femur is put to bed with Buck's extension applied for a week or ten days, until laceration of the soft parts has subsided, after which a brace is applied, the patient gets out of bed, is driven about in a carriage, and fed well.

Floating Liver, with Report of a Case.

Dr. J. Henry Carstens, Detroit, said that very few such cases had been reported. The condition was often associated with general ptosis of the abdominal viscera. The patient was a woman, aged 40, quite stout. A gradually developing tumor had been noticed, starting on the right side and growing downwards. It was firm and non-fluctuating. On account of the distressing nervous symptoms, an exploratory celiotomy was done, and the right lobe of the liver found enlarged and hanging down to the pelvis. It could be replaced in the normal position, and was stitched there. Recovery took place, with disappearance of all the distressing symptoms.

Dr. Willis G. MacDonald, Albany, had seen a considerable group of such cases. Some years ago he showed the lobe of a floating liver with a gall-bladder and some gallstones. He had seen two cases in which there was general ptosis of the liver, one in which, by change of position of the patient, it was quite possible to have had the liver float down beyond the border-line of the umbilicus, and, changing the position of the patient back again, have it disappear beyond the border of the ribs.

Report on Sterilization of Rubber Gloves by Formaldehyde, and on the Use of Mild Antiseptics Inside the Gloves.

Dr. A. Goldspohn, Chicago, has carried on a series of bacteriologic tests to determine the minimum requirements for sterilizing rubber gloves by formalin gas. He used small pieces of surgeon's silk as germ-carriers, because the gas would evaporate from them. With his experiments he determined that, 1, a small connection with a chimney flue to afford a circulation of the gas in the sterilizer appears to be necessary when the gas is generated by a lamp; 2, that three hours was the minimum time needed for certain sterilization in his apparatus of that construction. A cross test was made by pouring culture material into the gloves afterwards, and heating it. Sterilized boric acid powder is used as dusting powder inside the gloves to make them slip on dry and very easily. About one-half ounce of 55 per cent. alcohol is then poured into each glove. The fluid in the gloves after operating one or more hours was tested by culture in many experiments and found sterile with one exception.

Infection from the Bacillus Aerogenes Capsulatus.

Dr. Julius H. Jacobson, Toledo, after detailing some experiments and narrating observations, deduced the following conclusions: 1. That infection from the bacillus aerogenes capsulatus occurs much more frequently than is recognized. 2. It dominates the whole field of pneumo-pathology (Welch). 3. Such terms as emphysematous gangrene, air embolism, emphysematous cellulitis, are misleading and vague, and should become obselete. 4. Infection from this germ produces a rapid toxemia; the formation of gas in infected areas resulting in gangrene and death. 5. Its principal habitat is the soil and intestinal tract. 6. Owing to its wide distribution in the soil, the danger of infection in all traumatic cases should not be forgotten. 7. A probable diagnosis can often be made by the history, clinical course, and objective signs of the case. 8. A positive diagnosis can only be made by bacteriologic examinations, cultural and animal inoculations. Simple stained specimens taken from the site of infection will often make the diagnosis.

Features Determining Permanency of Cure in Radical Operations for Hernia.

Dr. A. J. Ochsner, Chicago, said that the permanent success following herniotomy depended upon a comparatively small number of practical points which must be observed in order to secure satisfactory results regularly: 1. The wound must heal primarily because suppuration resulted in an abundance of cicatricial tissue and this was most unstable. 2. The stitches must not be drawn tightly, in order to avoid pressure necrosis. 3. The edges of the wound to be united must be free from fat and other unstable tissues. 4. The wound should be supported by broad rubber adhesive plaster strips until healed. 5. The patient should be kept in bed two or three weeks. 6. After the operation abnormal intra-abdominal pressure should be eliminated by avoiding constipation, etc.

1. In inguinal hernia the entire sac should be removed. *It was especially important to remove all the loose tissue between the transversalis and internal oblique muscles on one side and Poupart's ligament on the other.* The upper portion of this canal should be closed with especial care. In case of a long omentum this should be resected.

2. In femoral hernia the canal through which the sac protruded was a perfect ring and consequently if the entire sac was removed this ring would invariably close, and there could be no recurrence. All meddlesome operations contemplating the closure of this ring caused a certain percentage of recurrences.

3. In ventral hernia, following laparatomy, the original layers should be laid bare, and then the corresponding layers should be carefully united. The author preferred deep silkworm gut sutures to be tied after each layer had been united separately with chromicized catgut sutures.

4. In umbilical hernia the ingenious operation first described by Dr. W. J. Mayo, consisting of an overlapping of the edges of the hernial ring from above downward or from side to side for a distance of one and one-half inches, had given complete satisfaction.

Severing of the Vas Deferens and Its Relation to the Neuro-psychopathic Constitution.

Dr. H. C. Sharp, Jeffersonville, Ind., discussed the subject under three heads: 1. The law of heredity, influencing the formation of the character of intellect and will, and the controlling of the appetites and passions, and all the moral impulses, and the pathological conditions to which the mental and physical life are subject. The chief manifestations of this diathesis are chorea, hysteria, hypochondriasis, inebriety, imbecility, criminality, and insanity; and it includes in its subjects sometimes the most gifted, as Burns, Coleridge, Dr. Quincey, and others. 2. The rapid proportional increase of this diathesis, in the face of the efforts of noted sociologists and penologists. 3. The severing of the vas deferens as the means of stamping out this diathesis. The author outlined the field of the operation, the preparation for and method of operating.

Dr. A. J. Ochsner had removed the vas deferens in a number of tubercular cases since his first operative work on defectives and criminals, and in no case has there been any disturbance of the ability of the patient to enjoy sexual intercourse.

Morbid Conditions of the Upper Respiratory Tract Resulting from Infectious Diseases.

Dr. Carolus M. Cobb, Boston, gave a résumé of the autopsies reported by Wolff, Pearce and Zuckerkandl. These autopsies showed that the involvement of the nasal accessory sinuses during the course of the fatal cases of diphtheria, scarlet fever, measles, and influenza, was the rule rather than the exception. He then showed from an analysis of 102 cases of nasal or post-nasal catarrh without nasal obstruction, that 69 per cent. of these cases could be traced directly to one or more attacks of the infectious diseases. He called attention to the danger of treatment to the ears during the height of the primary disease, by means of douches, and drew the following conclusions:

Acute Intestinal Auto-Infection.

Dr. John M. Batten, Dowingstown, Pa., was called to see professionally W. F. B., 56 years, on Feb. 21, 1898. He had been suffering with exhaustion for several days, although neither his pulse nor his temperature was disturbed. He ordered him to bed, thinking that rest in bed might be beneficial to him. Within forty-eight hours, on his own account, patient took a dose of calomel, which still further prostrated him, so he had to be assisted to bed from the chamber. He noticed that patient had had a gray, leaden complexion for several weeks preceding his first call. That gray or cachetic complexion which was present is usually pathognomonic of intestinal auto-infection, although it may indicate malignant disease of the liver. In fact, it was his opinion it was malignant disease of the liver for several days after his first visit, before he could make a differential diagnosis of intestinal auto-infection from malignant disease of the liver, as there was a congestion or a thickening of the lower end of the stomach and upper end of the duodenum. The patient was corpulent, weighing 220 pounds, and lost 40 pounds during the two months he was confined to bed. Previous to his ailment, patient had been careless in securing a regularity in the movement of his bowels for some months. The usual symptoms presented themselves, constipation, flatulency, borborygmus, urates and the constituents of the bile in the urine, fever, headache, unpleasant dreams, and melancholia.

The treatment consisted of large daily doses of calomel till the bile flowed freely, then antiseptics internally, together with small doses of mercury, till an amelioration of the disease was effected, then the natural mineral waters, followed by vegetable tonics in connection with hot baths. For weak heart, with which he suffered, strychnia was prescribed. Nitrate of silver and small doses of mercury for the congestion of the lower end of the stomach, and upper end of the duodenum, which was thought to exist. The diet was beef essence, but he did not exhibit a disposition to eat. His legs swelled in convalescence, and he suffered acute pain alternately in the knees. Patient in due time fully recovered his health, after a protracted stay at Mount Clemens, Mich., whence he had gone as soon as he had convalesced sufficiently to enable him to do so.

Asthma.

Dr. John North, Toledo, Ohio, said that a great many theories have been advanced as to the etiology and pathology of asthma; among them may be mentioned reflex neurosis, contraction of bronchial tubes, nervous spasm, blood disease, irritation of air-tubes, irritating humors, extension of bronchitis, vasomotor bronchitis, diathetic neurosis, neuroses of the pulmonary plexus, uric acid diathesis, oxalic acid dyscrasia, excessive venous blood in the medulla, as a symptom of emphysema and bronchitis, etc. Most of these theories contain a small grain of truth, but no one of them can account for the asthmatic paroxysm. Three factors are required for the production of asthma. These are called the "asthmatic tripod," as follows: 1. A vulnerable area of mucous membrane. 2. An abnormally sensitive nerve center. 3. An external irritant or exciting cause. If all these three factors are present at any one time, we will have an attack of asthma. No two of them can produce an attack; all three are required. Remove one of them, and the attack of asthma will not return. The first factor for the production of asthma may be situated in the nose, naso-pharynx, pharynx, larynx, or bronchial tubes. The various names given to the different varieties of asthma are derived from the locality of the vulnerable area of mucous membrane. The second factor may be either inherited or acquired. The neurotic element in asthma has been observed by all writers. Uric acid, oxalic acid, and the oxalates may produce abnormal nerve centers. The third factor is difficult to determine in some cases, as we may have a number of irritants and exciting causes.

In the treatment of asthma, attention must be given to the three factors necessary to produce asthma. The treatment is divided into that of relieving the paroxysm of dyspnea, and treatment during the interval to prevent their recurrence. The relief of the paroxysm may be accomplished by remedies that relieve either of the three factors mentioned.

(To be continued.)

OMAHA MEDICAL SOCIETY.

Regular Meeting, held Sept. 11, 1901.

First Aid to the Injured.

Dr. August F. Jonas delivered an address on this subject. Dr. Jonas is the surgeon of the Union Pacific Railway and has been most fortunate in being permitted to carry out his ideas with reference to his department unhampered. He said that the proposition to establish classes for instruction in first aid work and to introduce the work over the whole system, was a business one, of advantage both to the company and the men. He was given carte blanche, and has been at liberty to do as he thought best.

It was Dr. Jonas' idea that the men must be instructed systematically, simply, and practically, and that interest in matters in first aid must be kept alive. To this end, classes were formed and models, charts and living subjects were used to teach the rudiments of anatomy. Very simple, plain English terms only were used. The pupils proved to be surprisingly apt. In a later lesson, shock, wounds, hemorrhage, burns and exposure to cold were considered. Still later, fractures, sprains, dislocations, suffocation and drowning were taken up. The next lesson covered fainting, apoplexy, intoxication, heat-stroke, epilepsy, concussion and poisons. Lastly, bandaging and transportation of the injured were taken up. The men were impressed with the idea that this instruction did not make them doctors and that the function of the first-aid man was to render intelligent assistance prior to the coming of the physician and that the uninstructed, though well meaning, who tried to assist the injured, often did things which were both useless and positively harmful. They were taught as strongly what not to do as they were what to do. Esmarch's triangular bandage was shown and used with surprisingly good results. The classes were shown how to use very simple splint material to prevent simple fractures from becoming compound. The use of simple, domestic remedies was taught. Each pupil was required to dress imaginary wounds and burns, to apply splints, bandages and the tourniquet, and to perform artificial respiration. Transportation of the injured, with and without stretchers, was practically taught. The interest manifested by the pupils was most flattering. They very quickly recognized any mistakes made in applying dressings. The pupils were all furnished with a copy of the "Manual of First Aid to the Injured," by Bowditch Morton, M.D. To maintain the interest, a "first-aid fraternity," composed of members who have passed an examination for the emergency corps, will be organized. The fraternity will have a ritual and will be officered by the men themselves. Dr. Jonas said that he was most gratified to know that the mass of the men had already learned not to put their fingers into a wound.

After a great deal of experimentation, he had placed in the various shops and upon all railway trains a tin box of first-aid supplies. These boxes are about 10 by 12 and 4 inches deep. They have four partitions of binder's board which can be used for small splints. The box contains antiseptic tablets, antiseptic pads, cotton, picric acid gauze, adhesive plaster, court four or five weeks, so that the fragments may become thoroughly united and healed before resorting to passive motion. Passive motion was used too early.

Dr. W. T. Stewart, Chicago, spoke of suturing the fragments in fractures, saying he had been disappointed in using the various methods recommended in text-books and journal literature, and expressed the hope that some member would speak of immobilization of parts in delayed union of fractures, and in fractures of recent occurrence.

Dr. S. S. Thorn, Toledo, said one cause of delayed union in fractures was malnutrition, the result of enforced anemia, and this anemia was the result of applying bandages too tightly and the use of short splints, thereby causing constriction, which resulted in anemia, starvation, and hence delayed union.

Dr. A. J. Ochsner, Chicago, mentioned the interposition of muscle or fascia between the fragments as another cause of non-union of bone, and cited cases in point.

Dr. A. M. Phelps, New York, spoke of a third reason why union did not take place after a fracture of the thigh—the nutrient artery became ruptured, and thus nutrition was cut off. Treating fracture with coaptation splints was wrong. He favored extension (Buck) and fixation in fractures of the femur. A patient with a fractured femur is put to bed with Buck's extension applied for a week or ten days, until laceration of the soft parts has subsided, after which a brace is applied, the patient gets out of bed, is driven about in a carriage, and fed well.

Floating Liver, with Report of a Case.

Dr. J. Henry Carstens, Detroit, said that very few such cases had been reported. The condition was often associated with general ptosis of the abdominal viscera. The patient was a woman, aged 40, quite stout. A gradually developing tumor had been noticed, starting on the right side and growing downwards. It was firm and non-fluctuating. On account of the distressing nervous symptoms, an exploratory celiotomy was done, and the right lobe of the liver found enlarged and hanging down to the pelvis. It could be replaced in the normal position, and was stitched there. Recovery took place, with disappearance of all the distressing symptoms.

Dr. Willis G. MacDonald, Albany, had seen a considerable group of such cases. Some years ago he showed the lobe of a floating liver with a gall-bladder and some gallstones. He had seen two cases in which there was general ptosis of the liver, one in which, by change of position of the patient, it was quite possible to have had the liver float down beyond the border-line of the umbilicus, and, changing the position of the patient back again, have it disappear beyond the border of the ribs.

Report on Sterilization of Rubber Gloves by Formaldehyde, and on the Use of Mild Antiseptics Inside the Gloves.

Dr. A. Goldspohn, Chicago, has carried on a series of bacteriologic tests to determine the minimum requirements for sterilizing rubber gloves by formalin gas. He used small pieces of surgeon's silk as germ-carriers, because the gas would evaporate from them. With his experiments he determined that, 1, a small connection with a chimney flue to afford a circulation of the gas in the sterilizer appears to be necessary when the gas is generated by a lamp; 2, that three hours was the minimum time needed for certain sterilization in his apparatus of that construction. A cross test was made by pouring culture material into the gloves afterwards, and heating it. Sterilized boric acid powder is used as dusting powder inside the gloves to make them slip on dry and very easily. About one-half ounce of 55 per cent. alcohol is then poured into each glove. The fluid in the gloves after operating one or more hours was tested by culture in many experiments and found sterile with one exception.

Infection from the Bacillus Aerogenes Capsulatus.

Dr. Julius H. Jacobson, Toledo, after detailing some experiments and narrating observations, deduced the following conclusions: 1. That infection from the bacillus aerogenes capsulatus occurs much more frequently than is recognized. 2. It dominates the whole field of pneumo-pathology (Welch). 3. Such terms as emphysematous gangrene, air embolism, emphysematous cellulitis, are misleading and vague, and should become obselete. 4. Infection from this germ produces a rapid toxemia; the formation of gas in infected areas resulting in gangrene and death. 5. Its principal habitat is the soil and intestinal tract. 6. Owing to its wide distribution in the soil, the danger of infection in all traumatic cases should not be forgotten. 7. A probable diagnosis can often be made by the history, clinical course, and objective signs of the case. 8. A positive diagnosis can only be made by bacteriologic examinations, cultural and animal inoculations. Simple stained specimens taken from the site of infection will often make the diagnosis.

Features Determining Permanency of Cure in Radical Operations for Hernia.

Dr. A. J. Ochsner, Chicago, said that the permanent success following herniotomy depended upon a comparatively small number of practical points which must be observed in order to secure satisfactory results regularly: 1. The wound must heal primarily because suppuration resulted in an abundance of cicatricial tissue and this was most unstable. 2. The stitches must not be drawn tightly, in order to avoid pressure necrosis. 3. The edges of the wound to be united must be free from fat and other unstable tissues. 4. The wound should be supported by broad rubber adhesive plaster strips until healed. 5. The patient should be kept in bed two or three weeks. 6. *After the operation abnormal intra-abdominal pressure should be eliminated by avoiding constipation, etc.*

1. In inguinal hernia the entire sac should be removed. It was especially important to remove all the loose tissue between the transversalis and internal oblique muscles on one side and Poupart's ligament on the other. The upper portion of this canal should be closed with especial care. In case of a *long omentum this should be resected.*

2. In femoral hernia the canal through which the sac protruded was a perfect ring and consequently if the entire sac was removed this ring would invariably close, and there could be no recurrence. All meddlesome operations contemplating the closure of this ring caused a certain percentage of recurrences.

3. In ventral hernia, following laparatomy, the original layers should be laid bare, and then the corresponding layers should be carefully united. The author preferred deep silkworm gut sutures to be tied after each layer had been united separately with chromicized catgut sutures.

4. In umbilical hernia the ingenious operation first described by Dr. W. J. Mayo, consisting of an overlapping of the edges of the hernial ring from above downward or from side to side for a distance of one and one-half inches, had given complete satisfaction.

Severing of the Vas Deferens and Its Relation to the Neuro-psychopathic Constitution.

Dr. H. C. Sharp, Jeffersonville, Ind., discussed the subject under three heads: 1. The law of heredity, influencing the formation of the character of intellect and will, and the controlling of the appetites and passions, and all the moral impulses, and the pathological conditions to which the mental and physical life are subject. The chief manifestations of this diathesis are chorea, hysteria, hypochondriasis, inebriety, imbecility, criminality, and insanity; and it includes in its subjects sometimes the most gifted, as Burns, Coleridge, Dr. Quincey, and others. 2. The rapid proportional increase of this diathesis, in the face of the efforts of noted sociologists and penologists. 3. The severing of the vas deferens as the means of stamping out this diathesis. The author outlined the field of the operation, the preparation for and method of operating.

Dr. A. J. Ochsner had removed the vas deferens in a number of tubercular cases since his first operative work on defectives and criminals, and in no case has there been any disturbance of the ability of the patient to enjoy sexual intercourse.

Morbid Conditions of the Upper Respiratory Tract Resulting from Infectious Diseases.

Dr. Carolus M. Cobb, Boston, gave a résumé of the autopsies reported by Woffl, Pearce and Zuckerkandl. These autopsies showed that the involvement of the nasal accessory sinuses during the course of the fatal cases of diphtheria, scarlet fever, measles, and influenza, was the rule rather than the exception. He then showed from an analysis of 102 cases of nasal or post-nasal catarrh without nasal obstruction, that 69 per cent. of these cases could be traced directly to one or more attacks of the infectious diseases. He called attention to the danger of treatment to the ears during the height of the primary disease, by means of douches, and drew the following conclusions:

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ROCKY MOUNTAIN INTERSTATE MEDICAL ASSOCIATION.

Third Annual Meeting, held at Denver, Sept. 3 and 4, 1901.

Retinal Lesions of Chronic Interstitial Nephritis.

Dr. Edward Jackson, Denver, divided the lesions into the following, 1, alterations in contour, size, color of the retinal vessels; 2, hemorrhage; 3, retinal edema; 4, degenerative changes in the neural elements of the retina and alterations in the layer of pigment epithelium; 5, deposits of exudate. These retinal changes are closely associated with vascular changes, and are more constant than with albumin in urine, casts of any form or any other clinical evidence of renal disease. They appear when the balance of blood pressure and matter to be eliminated has been lost, and give most positive notice of a state of nutrition that can not very long continue.

Changes Necessary to Secure Interstate Medical Licenses.

Dr. John A. Donovan, Butte, Montana, after reviewing the laws of the ten Western States, arrives at the conclusion that each state should amend its laws so as to accept certificates of certain other states. He does not agree with those who insist on the state making the educational requirements necessary to enter college.

Carcinoma of the Breast.

Dr. D. A. Richardson, Denver, analyzing the cases of carcinoma of breasts which he encountered during his twelve years of practice, noticed the following: That etiologically it is always of traumatic origin. He removed a sarcoma from a child 8 years old. If a carcinoma be let alone it becomes localized, and in many cases sacculated.

Conservative Surgery of the Ovary and Tube.

Dr. W. W. Grant, Denver, related a case and concluded that the ordinary benign cysts of the ovary should be treated by resection, and not by complete extirpation of the organ. The small healthy remnant of an ovary with an intact tube will carry on the functions of ovulation and menstruation normally.

Report of a Case of Acute Gangrenous Pancreatitis.

Dr. Leonard Freeman, Denver, said that the patient, Italian, 30 years, in good health until very recently, was seized suddenly with severe griping pain in abdomen, vomiting and diarrhea supervened. There were no chills, no headache; the abdomen was greatly distended, mind clear. Liver dulness was diminished, splenic dulness enlarged. There was some jaundice; pulse 100, temperature 101. In the left iliac region a dull resisting, somewhat prominent mass could be felt. An incision in the left iliac region revealed the presence of nearly a pint of bloody, foul-smelling, non-purulent fluid. The condition of the patient precluded further exploration. The autopsy showed a friable, disintegrated, greatly enlarged and gangrenous pancreas.

Report of Seventy Cases of Lobar Pneumonia.

Dr. J. N. Hall, Denver, gave the conclusion derived from a study of cases seen between September 1, 1900, and April, 1901. Deaths were 24, or 34.8 per cent. Eight cases died within twenty-four hours after admission to hospital. Of the 3 in the 1st decade of life all recovered; of the 16 in the 2d decade, 5 died; of the 13 in the 4th decade 6 died. Total number of lobes involved were 116. Other diseases associated were tuberculosis, 7; typhoid, 3; erysipelas, 1; general sepsis, 1; acute rheumatism, 1; cerebral thrombosi, 1; traumatic pneumothorax, 1; Bright's disease, 2; advanced empyema, 1; organic mitral regurgitation, 2. Highest temperature was 106. Venesection should be oftener employed. Sinapisms and turpentine stupes were used, as also ice. No medicinal antipyretics were used. Alcohol was freely used. He believes in the usefulness of strychnin.

Chemical Treatment of Traumatism.

Dr. R. Harvey Reed, Rock Springs, Wyo., said that peroxid of hydrogen was valuable in this condition: 1, as a hemostatic in oozing wounds; 2, to wash out pus and pathogenic microbes; 3, to diagnosticate and locate the extent of sinuses. He gives preference to moist dressings for the following reasons: Cell proliferation does not take place when the parts are dry. Dusting bodies collect in chunks and become foreign bodies.

Mountain Fever.

Dr. W. W. Woodring, Mt. Pleasant, Utah, takes the stand that there is such a thing as mountain fever. It is mostly confined to the young. He has never seen a case in a man over 50 years of age. It is ushered in with chill and followed by a temperature of from one to four degrees in the first twenty-four hours.

Report of Two Unusual Cases of Multiple Neuritis in Children.

Dr. E. Delehanty, Denver, reported a case in a boy who developed chorea after an attack of typhoid fever. Sometime after he recovered from the chorea he complained of pains in feet and hands, tingling sensation with feelings of pins and needles, wrist drop, foot drop, anesthesia of fingers and toes, wasting of extensors. Breathing later became difficult and diaphragmatic. Patient died. The other case was a boy of 9 years. After an attack of diphtheria he commenced to complain of numbness and tingling, double vision, wasting, foot drop, paralysis of soft palate. Death occurred.

The Function of the Appendix.

Dr. E. P. Hershey, Denver, said that the appendix has a secretory function. Whether or not this function is of any importance remains to be ferreted out by further investigation. Impaction occurs in transverse colon, sigmoid and rectum. But as soon as the appendix becomes affected impaction occurs at the cecum. This cul-de-sac is the most inviting place for the accumulation of feces. The mass remains here and would become hardened were it not for the secretions that keep the mass thin and moist. It is fair to presume that inasmuch as the appendix in the vast majority of cases is found pointing upwards, backwards and slightly to the left that this is its normal position. These statements have become facts through observation of a number of cases that have had the appendix removed. Whenever constipation occurs in these cases a sense of heaviness and oppression occurs in the right iliac fossa, invariably relieved by free purgation.

Dr. Wright said that he hoped the doctor had weighed the matter thoroughly before presenting a paper of this kind to the Society.

Dr. Edson thought the author had produced in his argument no facts with which to prove his position. It is logical, and a very pretty piece of argument, but he has given us nothing upon which to base it. We have his conclusions but he has produced no facts with which to substantiate his position, and his argument does not take into account the known pathology of appendicitis, and he has advanced a new idea as to the position of the appendix.

Dr. Beggs: The Doctor states that the appendix has a legitimate function in the human being upon its anatomic structure—upon the claim that the appendix has a much larger glandular supply than any other portion of the intestines. Now, with reference to that, we are met in the beginning with a little confusion of ideas. Histologically, the mucous membrane of the appendix is almost the same as that of the large intestine. The structure of the tubular glands in the appendix is the same as that in the large intestine. They are so infinitesimally smaller in man when compared with the rest of the intestine that from a quantitive point of view they can be neglected. When we pass a little lower in the scale of animals we find that the appendix plays a much greater function in the lower animals than in man. The so-called valve of the appendix does not act as an obstruction to foreign bodies in their passage into the appendix, and we must not offer our ideas that a majority of our cases are due to foreign bodies.

Dr. Perkins' experience had been that quite a large percentage of appendicitis cases begin with diarrhea, and not with a constipation. Another point is that in opening the abdomen for other operations we find the appendix in a normal condition, and it appears to have practically nothing in it, and it is very small as a rule, sometimes appears to be almost obliterated in portions, and it seems if the secretory object of this kind was so great as the writer would lead us to believe that we would find it distended with fluid, and find much more evidence of this sort of thing.

Dr. Eskridge moved that Dr. Hershey be requested to give this Association at its next meeting the data on which he bases his conclusions after having pursued his investigations farther. The motion was carried.

Report of a Case of Rapid Respiration in Fatal Organic Diseases of the Brain.

Dr. J. T. Eskridge, Denver, reported at length a case of exceedingly rapid and very slow respiration, with pauses in respiration varying from twenty seconds to two minutes in duration, in a patient suffering from tubercular meningitis, syphilitic periarteritis of the pons and medulla, and from hysteria. The most rapid respiration was 140 to 142 per minute; the slowest 2 to 3 per minute, the latter extending over prolonged periods.

An Operation for Spina Bifida.

Dr. Leonard Freeman, Denver, reported a case of a baby 7 weeks old who had a spina bifida, a translucent tumor the size of a goose-egg. The sessile sac had steadily increased in size until the integument had become translucent and as thin as tissue paper. An elliptical incision was carried around the tumor near the base and the sac opened. The elongated conus was freed from its ventral attachments to the sac and replaced within the opening. The sac was cut away near its base, neck freed from its attachments to edge of cavity and stuffed into opening on to cord. The operation was whipped over with silver wire, and wound sealed with collodion. Satisfactory recovery took place.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

Fourteenth Annual Meeting, held at Cleveland, Sept. 17, 18 and 19, 1901.

FIRST DAY—MORNING SESSION.

President Dr. W. E. B. Davis, of Birmingham, Alabama, in the chair.

An Address of Welcome was delivered by Dr. C. H. Hoover, of Cleveland, to which a fitting response was made by President Davis.

Tubo-Abdominal Pregnancy.

Dr. William H. Humiston, Cleveland, reported this case. The principal points of interest were: 1. Extreme loss of blood and shock; pulse, 180, barely perceptible over radials; temperature, 95. 2. The prompt result of submammary injections of normal sterile saline solution at the time of beginning anesthesia. These injections were recommended in desperate cases. 3. No attempt was made to remove the large amount of blood filling the abdomen close to the pelvic brim. The large amount of blood gave no trouble, and was taken care of and absorbed by the peritoneum rapidly.

Cornual Pregnancy; Rupture in the Fourth Month; Operation; Recovery.

Dr. Miles F. Porter, Fort Wayne, Ind., saw Mrs. H. sixteen hours after she had been taken sick with severe abdominal pain accompanied by the usual signs of severe hemorrhage. She had had one living child and one miscarriage, and was near the middle of her third pregnancy. Hasty examination revealed nothing abnormal in the vagina save a slight bloody discharge. Celiotomy was immediately done and a ruptured cornual pregnancy of about four and a half months with bicornute uterus found. The belly was filled with blood. The ruptured cornu was amputated and the stump sutured, leaving the ovary and the tube attached to the stump. There was profound depression, which was treated by saline rectal injections, and hypodermic administration of digitalin and strychnin. Recovery was uneventful. A large quantity of warm sterile water was left in the abdomen. The intact cornu was much enlarged and attached to the ruptured cornu with a rather long pedicle. The gestation sac was thick save at the point of rupture and composed of uterine tissue. There was no communication between either the sac and the vagina or the tube and the sac. These communications became occluded subsequent to the impregnation. A decidual membrane was present. The presence of this membrane marks the case as one of ruptured pregnancy in an illy-developed cornu of a bicornute uterus. In tubal and interstitial pregnancy there is no decidual membrane in the sac. An abnormally low implantation of the tube and round ligament accounts for the fact that in this case they were attached to the outer side of the stump left after removal of the sac, and not to the sac itself, as is the rule. As a rule, pregnancy in a bicornute uterus terminates normally. In three of the cases referred to in the author's paper, including the author's, normal pregnancies preceded the rupture four times. In the others, no reference as to the other pregnancies was made. He had been able to find reports of but 18 cases of ruptured cornual pregnancy which, with his own, makes 19 cases reported to date. The symptoms are those of ectopic pregnancy save that the rupture occurs later in cornual pregnancy, and the hemorrhage is usually more profuse. A previous history of sterility or of tubal infection points to tubal rather than cornual pregnancy. These two papers were discussed jointly.

Dr. Edward J. Ill, Newark, N. J., endorsed the treatment employed by Dr. Humiston in his case, and said the quicker an operation is done in such cases, and the sooner the abdominal cavity is walled off, the better the chances for recovery of the patient. He agreed with Dr. Humiston as to the quantity of normal salt solution that these patients will receive and absorb. Massage assisted materially in the absorption of the fluid.

Dr. Edwin Walker, Evansville, Ind., referred to the indications for the use of normal salt solution in the abdominal cavity. He could not see what benefit was derived from the use of normal salt solution in the case of Dr. Humiston, for the reason there were well-organized clots, and these could not have been affected by it. Such clots, when organized, became drier and were absorbed, and the salt solution only aided in the absorption of any septic material that might be present. He believed it was a mistake in all cases to wash out the abdominal cavity with salt solution. By wiping out the cavity with dry gauze it could be made clean, if it was not infected.

Dr. M. Rosenwasser, Cleveland, commended the use of subcutaneous saline solution in the case of Dr. Humiston, but expressed doubt as to the value of salt solution in the abdominal cavity. He had not seen any special beneficial change either in the pulse or condition of the patient by leaving saline solution in the abdominal cavity. In packing the extraperitoneal cavity that was left, he used sterile gauze instead of iodoform gauze.

Dr. Herman E. Hayd, Buffalo, disagreed with Dr. Rosenwasser that the saline fluid was not absorbed. He had filled the peritoneal cavity with normal salt solution, leaving two stitches open, and in an hour and a half the fluid was absorbed, as subsequently verified by postmortem examination.

Dr. Rosenwasser did not wish to be understood as saying that the fluid was not absorbed, but that it was not readily absorbed when the peritoneum was in a pathological state.

Dr. J. Henry Carstens, Detroit, stated that the use of normal saline solution in the abdominal cavity prevented, to a large extent, agglutination of the intestines and omentum. This cavity could be cleaned out just as effectively by sponges as by washing it out with salt solution. The drier the cavity was kept, the better the chances for agglutination. He preferred the use of sterile rather than iodoform gauze.

Dr. James F. Baldwin, Columbus, Ohio, said he had been disappointed in the use of normal salt solution, whether injected into the subcutaneous tissue or poured into the abdominal cavity and left there to be absorbed. He had used salt solution again and again, and it seemed to him absolutely inert. He had never seen it produce a particle of benefit.

Dr. Charles Greene Cumston, Boston, stated that given a condition a patient was in when an operation was undertaken for ruptured tubal pregnancy, he did not think the peritoneal cavity nor the subcutaneous cellular tissue had a sufficient degree of vitality to be able to absorb the salt solution in the majority of cases. Furthermore, in cases where the surgeon injected salt solution into a cavity whose walls were the result of a pathologic change, he did not believe that the walls of that cavity would absorb the liquid. The only value that he could see in the normal salt solution was after a prolonged intra-abdominal operation, where the intestines had been exposed, where the loss of heat had been great and the surgeon desired to introduce a certain amount of heat into the abdominal cavity. On the other hand, the use of gauze sponges in wiping out the debris should be extremely limited because gauze would remove the epithelial covering of the peritoneum of the intestine and of the parietal peritoneum, and he believed was a fertile cause for adhesions after operation.

Dr. Edwin Ricketts expressed great disappointment in the use of normal salt solution. He believed the results of its subcutaneous use had been overestimated. Wiping out the abdominal cavity vigorously with a sponge was disastrous to the patient. Gauze should be pressed in and out without any marked friction of the peritoneum. No remedy had as yet been found equal to the judicious use of strychnin to overcome shock.

Dr. Humiston, in reply, said the abdominal cavity in his case was almost completely filled up to the under border of the liver with blood, and if he had attempted to handle the intestines and delay operation for the length of time it would take to cleanse the abdominal cavity of blood, he believed he would have lost his patient. He did not believe in irritating the peritoneal surface with dry gauze, as it injured it, and would often prove disastrous to the patient. He used iodoform gauze wrung out of hot sterile saline solution, thus washing the excess of iodoform out of it.

Transverse Incisions in Abdominal Celiotomy.

Dr. Charles Greene Cumston, Boston, for the last eighteen months had been opening the abdomen in many of his gynecological cases by a transverse incision, with a view to securing a more solid cicatrix than he believed could be obtained by a through-and-through incision. The first incision, which he had now made 45 times, is made at the upper limit of the pubic hair transversely, following a line parallel to the upper limits of the pubic hair, making it about a centimeter below the base of the hairy triangle. The skin and cellular tissue are cut through until the fascia is reached; the upper border of the wound is then rapidly dissected off the fascia by a few snips of the scissors and is then held up by a retractor. The lower border of the wound is also dissected off and drawn down by a retractor so that the incision becomes elongated, and if proper traction is made on the retractors by the assistant, a rectangular wound can be made sufficiently large to incise the fascia vertically to the extent of 5 or 6 centimeters. When incising the fascia he thought it better to do so over the inner border of one or the other rectus, and when the belly of the muscle has been freely exposed, its inner border is found and the whole muscular mass pushed aside, thus exposing the thin fascia underneath without wounding the fibers of the muscle in the slightest. After the peritoneum has been opened, the retractors holding the skin flaps back can be removed and ordinary abdominal retractors can then be employed. Through this transverse incision he had performed total hysterectomy with ease, and had done most of the ordinary work on the tubes and ovaries through an incision in the fascia not exceeding 6 centimeters in length. He had enucleated an intraligamentous fibroid the size of a fist through this incision without experiencing any difficulty whatsoever. He also described another incision which he had employed during the past two months nine times with great satisfaction.

Dr. Edwin Ricketts could not agree with the essayist that the incision recommended by him was more advantageous than a median incision, or, in a case of single pus tube, even an opening on one side. In fact, some operators now did not select a median incision, but made an incision either to the right or left.

Dr. J. Henry Carstens saw a general surgeon make a transverse incision in performing a gastro-enterostomy for the removal of the gall-bladder, but he had great difficulty in bringing the muscles and fascia together on account of the tendency to retraction. He thought the incision described by the essayist might prove advantageous for the removal of small tumors where an extensive operation was not needed.

Sarcoma of the Breast.

Dr. Edwin Ricketts, Cincinnati, reported two cases. The first patient was Mrs. McS., aged 64, married, mother of three children. Thirty years before, and at the age of 34 years, she first noticed a hard, round, small lump in her right breast. Eight years after this she called the attention of her family physician to it, exacting a promise from him that he would tell no one. This was twenty-two years before its removal. He advised non-interference. The essayist was called to see the patient in May, 1897; in January before, she had an attack of influenza, and was greatly prostrated from its effects, and from this time the tumor grew rapidly, being nearly the size of a child's head. On his visit he found her with a tumor of the right breast that was about as ugly and vicious looking a growth as he had ever beheld. The cancer was as large as a navel orange, from which a dark sanious fluid was discharging. It was so large that the right arm was forced to project well out from the body. Temperature and pulse were normal. After drying out the cavity it was packed full with 5 per cent. carbolic gauze. The surrounding skin was washed with soap and water, after which pure alcohol was freely applied. No enlarged axillary glands could be felt, especially after the growth was removed. The growth weighed 12 pounds. Although a large woman, he experienced some difficulty in bringing together the edges of the flaps. Axilla was not disturbed. He had two points of suppuration, but barring this her recovery was entirely satisfactory. It was now four and a half years since the operation, and there was no evidence *in loco* or by metastasis. The growth proved to be spindle-celled sarcoma. The essayist then reported his second case.

In the discussion, Dr. Cumston stated that every neoplasm of the breast should be removed as soon as it was palpable. The limit of three years for malignant disease of the breast as a sign that it would not recur was erroneous. He cited a case in point. He called attention to chronic interstitial mastitis, saying that this affection was more frequent in unmarried than in married women. Its pathology was not clear.

Dr. Carstens urged the early removal of any kind of tumor of the mammary gland. He narrated cases in which apparently benign tumors had undergone pathological changes and had developed into sarcomata.

Dr. Humiston held that a great many myomas of the uterus took on sarcomatous degeneration when it was least expected, and detailed an illustrative case.

Dr. Thomas B. Eastman, Indianapolis, discussed two points, saying that surgeons were disposed to search for enlarged axillary glands. Recent investigations had shown that a small gland might be full of carcinoma cells, while the larger glands might be free from them. Both small and large glands should be examined.

Dr. Joseph Price, Philadelphia, stated that for many, many years he had removed the axillary gland in cases of cancer of the breast. He saw Knowsley Thornton, of London, England, do the complete operation for carcinoma of the breast long before it was done at the Johns Hopkins Hospital, and that Thornton stated at that time it was invariably his rule in removing tumors of the breast to clean out the axilla, no matter what the suspicion might be.

Dr. John C. Sexton, Rushville, Indiana, was constrained to believe that sarcoma of the breast was not very rare. He had seen two cases, in one of which there was a rapid recurrence, with metastasis of the ovary of the same side. This was a round-celled sarcoma, which was confirmed by an eminent pathologist. The other case was one of ordinary spindle-celled sarcoma in which recurrence took place promptly.

Dr. Miles F. Porter desired to place himself on record as saying that every tumor of the breast was suspicious, and required operation, and in his judgment any operation which stopped short of complete removal of the breast and cleaning out the axillary gland was not good surgery, and that time would prove it.

Dr. Humiston said the statement made by the last speaker was too radical. Small benign tumors of the breast in young women could be readily removed by cocainization. Sections could be submitted to a microscopist, and if the tumor was found to be malignant a complete operation should be made.

Dr. Cumston believed that chronic interstitial mastitis in the majority of cases was the starting-point of malignant neoplasms of the breast. He urged early radical and complete operation.

Dr. E. Gustav Zinke, Cincinnati, said it was very difficult to say before a tumor was in one's hand or under the microscope what was the actual nature of it. The physician, therefore, was placed in a very embarrassing position. He illustrated this point by narrating an interesting case.

Dr. Baldwin asked whether it was proper to speak of cases in which secondary growths occurred many years afterwards as recurrences. Also, whether it was proper to speak of growths occurring elsewhere in the body as metastases. He mentioned a case in which he removed a sarcoma of the ovary with a long pedicle, but there were no adhesions. A few years afterwards the woman developed a sarcoma of the kidney. He did not consider this a metastasis, nor a recurrence, but a brand-new sarcoma of the kidney. He narrated other cases.

Dr. Carstens made an eloquent plea against the removal of the breast in cases of small benign tumors in young girls of 18 or 20. He vigorously contended that it was bad practice to do it, as it blighted their prospects for matrimony, and it was absolutely unnecessary.

Dr. Ricketts, in reply, endorsed the position taken by Dr. Carstens. In his case, if he had the operation to do over again, he should have removed only the tumor, and not a part of the breast with it.

FIRST DAY—AFTERNOON SESSION.

Galvanism as a Remedy for Uterine Hemorrhage.

Dr. Edwin Walker, Evansville, Ind., stated that galvanism as a remedy in gynecology had been unduly lauded and condemned. Apostoli's method commanded the respect of surgeons, but the results had not been commensurate with claims, and had not been without danger. The minor uses of electricity partook of the character of tinkering, and were objectionable. There still remained a limited field in therapeutics for it, but it did not replace surgery. Its use in uterine hemorrhage was quite satisfactory. It should not be used where the cause of the hemorrhage could be removed by a clean surgical operation. In mild cases, in which the hemorrhage was practically the only symptom, and where no radical operation would be entertained, galvanism was the remedy. In another large class of cases where grave disease in other organs contraindicated operation, relief and often a systematic cure could be effected. Accurate diagnosis of all lesions in each patient was of the highest importance, so that life was not hazarded by an operation in the presence of a serious lesion elsewhere which was overlooked, or the patient, even if she recovered, was not benefited for the same reason.

The method of application was quite simple. The positive pole is attached to a platinum electrode and introduced into the uterus; the negative pole, attached to a copper plate covered with moist absorbent gauze, is placed over the abdomen. The current is gradually turned on until a distinct burning is felt under the negative pole, and continued ten to thirty minutes. Strict asepsis is necessary. The application is not painful. Two to eight applications are required.

Dr. C. C. Frederick, Buffalo, stated that electricity had to a certain extent been replaced largely by surgical procedures. In the experimental stages the results that had been promised by the use of electricity by a great many who were enthusiasts were not borne out. Practitioners met with poor success with it, and in consequence became disgusted and abandoned it, and were now depending upon massage and surgical procedures to control uterine hemorrhages.

Dr. Hayd had used electricity for many years, in fact, for five months he had worked with Apostoli; consequently, he spoke advisedly. When he considered the amount of good that had been done with it in treating pelvic troubles, and compared it with the amount of harm wrought, he felt that it would have been the best thing if practitioners of medicine knew nothing about intrauterine galvanization.

Dr. Price expressed the belief that the application of electricity had a great deal to do in favoring the growth and development of fibroids rather than preventing or arresting them. He detailed two or three such cases.

Dr. Carstens referred to the various causes of uterine hemorrhage. In all cases of excessive hemorrhage there was some cause for it. Sometimes the cause was constitutional and required simply constitutional treatment, but no operation. In other cases the hemorrhage was indicative of malignant disease of the uterus. If the use of electricity was advocated in these cases and the information was circulated among general practitioners that this agent was good for uterine hemorrhage, the result would be that a great many cases of beginning cancer of the uterus would be treated for weeks and months and the golden opportunity to remove the disease by early and timely surgical measures would have passed, and a diagnosis would finally be made too late. He argued against the indiscriminate use of electricity for uterine hemorrhages.

Retrodisplacements in Young Girls and Unmarried Women; Frequency and Best Methods of Treatment.

Dr. Herman E. Hayd, Buffalo, N. Y., drew the following deductions: 1. A plea for the more careful examination of young women by competent and skilled men who can undertake any operative measures that are necessary. 2. Every case of retrodisplaced uterus in the young or unmarried or married woman may not require any treatment. 3. If they produce a definite symptomatology, the Alexander operation should be employed if the case be an operable one, that is, if the uterus is freely movable and the tubes and ovaries are healthy. 4. Retroversions and retroflexions in the young and unmarried should never be treated by pessaries, but by the Alexander operation. Tampons and pessaries have their place in retrodisplacements in married women or women who have been pregnant, but they accomplish practically nothing in the displacements of young women. 5. The Alexander operation is safe and without mortality incident to the operation, and no harm can come from its proper performance; even if the uterus subsequently falls, the patient is no worse off than she was previous to the operation. 6. It does not in any way interfere with pregnancy and future child-bearing, but, on the contrary, materially helps the possibility of pregnancy. 7. No pain or distress follows the operation if the case operated upon be properly selected, and if pain and suffering result, there existed at the time of the operation latent tubal and ovarian trouble, which sooner or later perhaps would have required a radical operation. If it becomes necessary to do a celiotomy on a person who previously had an Alexander operation, the uterus will be found in its normal anteflected position, which is necessary in every case, whether the tubes and ovaries are removed or not, to insure good health and freedom from future suffering.

Method for Suspension of Uterus.

Dr. Robert T. Morris, New York, opens the abdomen in the middle line. An incision two inches long will suffice for most cases. The peritoneum over one round ligament is split and the round ligament is drawn out with a hook for a distance of 3 inches, more or less. Drawing out the round ligament with a hook makes naturally a long loop. The arms of the loop are sutured together with silk or chromic catgut. This throws the sutured part of the round ligament out of commission, and leaves the ligament 3 inches shorter, more or less. The sutured loop is tucked back into the slit in the peritoneum of the broad ligament, and the opening is closed. The operation shortens the round ligaments, and allows the uterus to ride easily and elastically in a normal position. Its advantage over other ligament shortening operations lies in the securing of union of muscular structures. The surgeon does not have to depend upon peritoneal adhesion, which must be a failure in many cases.

Diseases and Injuries of the Cervix Uteri, and Their Treatment.

Dr. J. W. Hyde, Brooklyn, N. Y., presented this paper: 1. In cases where the injury is recent, and the constitution of the patient is so good that no extensive degenerations have occurred—in short, where there is a reasonable probability of being able to restore the cervix to a normal condition, this should be done by Emmet's operation. 2. In old cases, where extensive alterations have taken place, as proved by direct examination, and not less certainly by the unmistakable and intractable reflexes that attend such alterations, the unbearable headaches usually referred to the vertex and the nuchal region, the gastric disturbances, and the endless procession of psychic, neurotic, motor, cardiac, and respiratory aberrations, so familiar to every experienced physician, in such cases trachelorrhaphy is out of the question. To remove all the diseased tissue, and that alone, would call for an unattainable amount of nicety of dissection; and supposing the dissection accomplished, the sewing up of what was left might result in a most interesting thing "of shreds and patches," but it would not be a cervix uteri, which is the only legitimate object of trachelorrhaphy. In such cases, amputation is as effective clinically as it is logical in theory. 3. The operation is not more dangerous than trachelorrhaphy. 4. It is not likely to be followed by stenosis of the canal. 5. There is nothing in the operation that seriously militates against conception, or a normal gestation and delivery.

FIRST DAY—EVENING SESSION.

Mechanical or Combined Plastic and Mechanical Treatment of Retrodeviations of the Womb.

Dr. M. Rosenwasser, Cleveland, Ohio, stated that retrodeviations of the womb were either simple or complicated. The complicated were subdivided into those with movable and fixed womb. Of 116 patients treated for retroversion, 63 of the second and third degrees were selected as proper subjects for mechanical treatment. They were treated by means of the pessary alone, or the plastic operation was supplemented by a pessary. From a table furnishing the details the following summary is obtained: Cured, 11; symptomatically cured, 15; improved, 26; not improved, 11.

In the body of the paper the writer considered each of the divisions, as above classified, and illustrated each by a brief history of typical cases. He maintained that cases of complicated retroversion with movable uterus could be converted into simple ones by plastic operations, and were then subject to treatment by mechanical support. After refuting the objections generally raised against the pessary, he submitted the following conclusions, based upon the present imperfect status of suspension operations: 1. A retroverted womb uncomplicated by disease should be replaced and supported by a pessary. 2. Retroversion complicated by diseased womb, or by impaired pelvic floor, the womb being movable, requires preliminary plastic operation to restore the normal condition before using a mechanical support. 3. Suspension operations should not be done *simultaneously* with the plastic in face of the probability that a pessary can sustain the uterus in position. 4. Retroversion complicated by aggravated prolapsus requires simultaneous plastic and suspension operations to effect a cure. 5. The treatment of retroversion with fixed womb is that for pelvic inflammation. Whenever the latter requires laparotomy, or colpotomy, the retroversion becomes subject to such surgical treatment as may appear best suited to the particular case. 6. Retroversion, simple or complicated, in which mechanical support and plastic operation have failed to cure or to relieve, and in which the symptoms demand relief, constitutes a proper indication for a suspension operation.

SECOND DAY—MORNING SESSION.

Some Observations on the Surgery of the Spleen.

Dr. Lewis S. McMurtry, Louisville, said that knowledge of the physiology and pathology of the spleen is so imperfect that the surgery of this organ has not advanced proportionately with that of the other organs of the abdominal cavity. In view of this fact, every case which may possibly contribute to our knowledge should be studied and recorded. He then reported a case of large cyst of the spleen. The patient was a vigorous woman of 30, well nourished, with a fluctuating abdominal tumor, appearing upon the left side of the abdomen, and readily movable from pelvis to diaphragm. The diagnosis was ovarian cyst with elongated pedicle, or floating cystic kidney. On abdominal section the tumor was found to be a cystic spleen. This was removed without difficulty and without hemorrhage, followed by prompt recovery. A careful microscopic examination showed the cyst to be simple and sterile. Three similar cases were reported. The essayist then considered the technique of splenectomy for cystic tumors of the spleen, commending the median incision and enucleation from below. He stated that it was not the purpose of the paper to consider all varieties of diseases of the spleen, nor to tabulate the statistics of splenectomy for hypertrophy and miscellaneous diseases, but rather to show that cystic degeneration of the spleen is sufficiently common to make a class of tumors deserving recognition as a factor in the diagnosis of cystic tumors of the abdomen. The results of operation in these cases show that the spleen is not essential to life and health.

Is Cesarean Section Justifiable in Placenta Previa?

Dr. E. Gustav Zinke, Cincinnati, went rather exhaustively into the history and literature of this subject and considered the cases reported. He referred to the justifiability of the operation, and the class of cases to which it is applicable. He likewise dwelt on the contraindications to the operation, and compared the management of placenta previa with and without Cesarean section. He believed that the Cesarean and the Porro operations were perfectly legitimate and elective procedures in all cases of placenta previa, central and complete, and especially so when the patient was a primipara, when the os was closed and the cervix unabridged; when hemorrhage was profuse and could not be controlled by tampons and separation of the placenta around the internal os. That there were cases of partial previa that might be successfully treated in the old way, he did not doubt. Perhaps a small majority of all the placenta previa cases could be treated successfully, so far as the mothers were concerned, after the manner of Fry and De Lee. But what of the large minority of mothers that succumb and the great majority of children that are sacrificed at once? The question presented was a very serious one, and should be earnestly considered, and when confronted with a case of central or complete placenta previa, or any other variety, where dilatation of the cervix was impossible or difficult, the patient and her immediate friends should be made acquainted with all the facts concerning both methods of treatment. If properly presented, he thought it was doubtful whether the majority of women would select forcible dilatation, version, extraction, etc.

Importance of the American Medical Association.

Dr. W. E. B. Davis, Birmingham, Ala., delivered the "Presidential Address." After congratulating the *Association* upon the great work it had accomplished, urged the Fellows to use their influence in the better organization of the sections of the American Medical Association. He said: "The greatest and most influential organization in the United States should be the American Medical Association, the brightest lights in the profession should gather at its annual meetings and be prominent in the work of its sections and committees. Failure to be an active contributor to the work of this general national organization should be a deserved reflection on a prominent physician, whether he be a general practitioner or a specialist. It is not enough that our special societies should succeed, but they should prove a source of strength to the entire profession, which can be best subserved by strengthening the American Medical Association, making it not only a power in scientific work, but giving it the prestige which will enable scientific medicine to receive due recognition from our national government."

Surgical Treatment of Biliary Calculi, with Special Reference to Hepatotomy.

The remainder of President Davis' address was confined to the principal operative procedures for cholelithiasis. He favored cholecystostomy, as a rule, for gall-bladder and cystic duct calculi. He said: "Much has been claimed within the past five years for cholecystendysis, with or without drainage of the abdominal cavity. While this operation has something to commend it, being simple and obviating the disagreeable discharge of bile, from three to four weeks, from a fistula, yet its field is limited when the etiology and pathology of cholelithiasis are given due consideration. Stagnation of bile with altered epithelium and infection from the typhoid or colon bacillus as found in many cases, where there is no evidence of infection from the character of the fluid in the bladder, would contraindicate its closure. If stones should be found, where an examination of the gall-bladder is conducted through the abdominal incision made for the relief of pelvic disease or other abdominal trouble, cholecystendysis might be performed with advantage." He advised strongly against the operation as performed by Kelly. The primary incision in the abdomen should be closed and the opening made as in the classical cystotomy. Cases in which calculi would be found by this method are not associated with inflammatory changes, and are the ones who go through life without symptoms referable to the gall-bladder being found at the autopsy or in the dissecting room.

Cholecystectomy.

This operation was reserved for stricture of the cystic duct, inflammatory changes which greatly endanger the walls of the bladder, and malignant disease. In discussing stone in the common duct, he said: "Choledochostomy without suture is called for in the large majority of common duct stones. Suture of the duct may be practiced if the patient's condition has not been rendered serious by much suffering and protracted jaundice, and if the duct is enlarged and not markedly inflamed. Gauze drainage should be resorted to in all cases, it matters not how carefully the stitching of the duct has been carried out. The time required for suturing the duct adds very greatly to the gravity of the operation in cholemia of long duration. It would also be contrary to surgical practice elsewhere to suture when offensive infected bile escapes from the duct. Morison's pouch, which will hold nearly a pint of fluid, makes drainage in this location entirely satisfactory. The lumbar stab is preferred by some surgeons, but the entire safety of transperitoneal drainage has been abundantly demonstrated. Kehr, who has done more gall-stone operations than any other surgeon, claims that he first advised the open treatment of the duct, but it is known that he is in error as the operation has been urged for the reasons he gives, in this country, since the early part of 1892, at which time experiments were conducted by me on the lower animals and reported to the American Medical Association. At that time and for some years afterwards it was admitted by surgeons that the operation would succeed on normal organs with normal bile, but not otherwise. I afterwards induced pathologic changes in the biliary passages and demonstrated that the operation was successful in infected and enlarged ducts. Experimental and clinical experience demonstrate conclusively the safety of the operation."

At the Indianapolis meeting, two years ago, Dr. Davis reported two cases in which hepatotomy had been done in obstruction to the biliary passages. The operation is indicated in cases of obstruction with enlarged liver where the gall-bladder or duct can not be isolated, if the patient's condition from exhaustion and cholemia will not permit of a protracted search for the bladder or ducts. After the patient's condition is better, a rapid operation may be done. It will only exceptionally be called for, and the cases will be fewer as the surgeon's experience increases in choledochus operations; for he will then be enabled to better locate the bladder and ducts so much changed by inflammatory processes. In addition to the above indications, he thought the operation should be resorted to in hepatitis before it has reached the stage of pus formation, if the liver does not rapidly become smaller after drainage of the biliary reservoir of the duct. His attention was first attracted to the value of the procedure in a case in which the amount of pus removed was not more than half an ounce, but in which the division of the biliary canals resulted in the escape of large quantities of bile for many weeks. In December, 1898, he had done hepatotomy on one case in which there was a movable stone in the common duct, and in the same month in a case of obstruction of the hepatic ducts by malignant disease.

In July and August of this year he had conducted a number of experiments on dogs to determine the value of incisions in the liver in relieving biliary obstruction. Five dogs were killed and the liver injected with fluid either through the gall-bladder, the common duct having been tied, or through the common duct. Incisions were then made in all parts of the liver, with the result that streams of the fluid would issue from the bile canals and general oozing of the fluid from the wounded surfaces of the organ if much force was used. Six were anesthetized and the liver injected as above, and this fluid with blood would flow, as a rule, freely when much force was used in injecting the fluid. Four had the common duct tied, and after twenty-four hours the same experiment was conducted under anesthesia, with similar results. In nine the common duct was ligated and gauze packed around the field of the gall-bladder and ducts. After from twenty-four hours to a week the liver would be incised in one or more places, and as a rule the bile escaped satisfactorily through the gauze. It would be very dark after prolonged obstruction. Two of the dogs died and the others were killed in from five days to two weeks. Before killing them and while under the anesthetic, fluid was injected through bladder or duct, and would flow from the wounds which had been previously made in the liver and also from incisions made at that time. Five had the gall-bladder removed and the cystic and common ducts ligated, but as gauze was not used at the time of operation to wall off the general cavity, they died in from twenty-four to forty-eight hours from the escape of bile, with shock.

With the advance in choledochus surgery, the field for cholecystenterostomy grows smaller.

Dr. Davis was assisted in his experimental work by Dr. R. E. Hogan, of Birmingham.

SECOND DAY—AFTERNOON SESSION.

Gallstone in the Common Duct; Its Frequency, Symptoms, Diagnosis and Treatment.

Dr. L. H. Dunning, Indianapolis, Ind., quoted from the recent paper of Mosher, whose compilation of the Johns Hopkins Hospital records shows that gallstones are present in 6.94 per cent. of our population, and that in 13 per cent. of all cases of gallstones the calculus is arrested in the common duct. For convenience of description the author adopted the generally accepted classification of gallstone in the common duct, namely, 1, the acute form in which there is acute obstruction, transient jaundice, and the typical gallstone colic; 2, chronic obstruction of the common duct from lodgment of a stone somewhere in the course of the duct. The first division represents the old classical form of bilious colic and the symptoms are so well known that he did not enumerate them in detail. In chronic obstruction from gallstones the jaundice is more or less intermittent and there is pain in the hypochondrium, epigastrium and back. The pain is not so severe as in acute obstruction, and is very irregular. It may be located in the epigastric or lumbar region. As a rule, there is absence of a tumor in the gall-bladder region, but marked soreness. There is marked loss of weight, and frequently chills and intermittent fever. The Carlsbad cure, a sojourn at the French Lick Springs, large draughts of oil, the application of hot fomentations to the hypochondrium, and opiates to relieve pain are all of benefit in the acute cases. The chronic cases are amenable to surgical treatment alone. The author cited and remarked upon the various methods of surgical procedure. Choledochotomy was shown to be the most approved method when applicable. The middle third of the duct is the point of choice for the incision. When the stone is in the duodenal end of the duct, it can usually be crowded back into the middle portion and removed through an incision in that part. An incision through the cystic duct may be carried onward into and through the common duct if the upper portion be chosen for the line of incision. Duodeno-choledochotomy is applicable to cases of a large fixed stone in the duodenal extremity of the duct. This method yields a higher rate of mortality than simple incision of the choledochus. Only soft stones should be crushed, and needling is unsatisfactory. The writer would reserve cholecystenterostomy in common duct obstruction for those cases in which the patients could not endure the longer operation of choledochotomy. Four cases were reported in detail.

Dr. George S. Peck, Youngstown, Ohio, reported some cases of extrauterine pregnancy, and presented specimens.

Dr. M. Rosenwasser, detailed a case of tubal pregnancy upon which he operated in the eighth week, immediately before the occurrence of rupture.

Acute Pancreatitis and Fat Necrosis.

Dr. Edward J. Ill, Newark, N. J., reported a case because of the rarity of the disease and the interest attached to the operations for this ailment. The patient was a woman, 43 years of age, with the usual history of gallstone colic. She was taken sick suddenly with excruciating pain in the epigastrium, excessive vomiting and obstruction of the bowel. In twelve days after the onset of the disease a tumor was made out. The patient was operated on the twentieth day after the onset of the disease. The diagnosis was perforative inflammation of the gall-bladder, although a pancreatitis and fat necrosis was suggested. The patient's urine contained bile, albumin, and granular casts, with a specific gravity of 1028. It contained no sugar. The operation consisted of a right lateral abdominal section, and an opening between the stomach and the transverse colon through an immensely thickened omentum. Fluid was reached at the head of the pancreas, which was drained through a rubber tube and iodoform gauze. The whole pancreas seemed to be involved in the disease. The omentum upon section showed whitish-gray nodules containing brown roundish spots. For a time the patient seemed to do well, but in about seven weeks she had a relapse from which she died in three weeks. A second operation was done for her relief. At the postmortem it was shown that there were four gallstones in the gall-bladder and only a small mass of substance of the pancreas was left. The author went extensively into the literature of the subject. He mentioned especially the work of Balser, Fitz, Langerhans, Korte, Hildebrand, Robson and others.

Early Operation in Appendicitis and Method.

Dr. Joseph Price, Philadelphia, in the last three months had operated on about one hundred cases of this disease. Seventy-five per cent. had been managed by open treatment. All of them had been explosive cases and none of the operations was done the first or second day. In two ball-players the operations were done on the third day. In both cases he found gangrenous appendicitis with perforations, and general peritonitis. Both were recognized and could have been operated on twenty-four hours early. He was satisfied that there was but one treatment for this disease—early, clean removal of the appendix. The choice of method should not worry operators. A pair of scissors with needles and fine thread was all that was necessary. The appendix should be cut off smooth with the cecum, and the opening closed with fine silk. This summer the operations had been done by him chiefly on children between the ages of 8 and 20. About 75 per cent. were boys—fine, athletic chaps; and about 25 per cent. girls. A large number of the latter were menstruating at the time of the operation. In some instances it complicated the diagnosis. The disease had been quite common and fatal at summer resorts. A large number of operations had been done at Atlantic City, and a few patients were sent home for operations. The interval operation had done much to mislead the general practitioner, and much to complicate operation, in which there should be no complications.

THIRD DAY—MORNING SESSION.

Vaginal Hysterectomy with Four-and-a-Half Months' Pregnancy and Closed Cervix.

Dr. J. Henry Carstens, Detroit, reported a case. The patient was a woman, Mrs. D., only 26 years of age, mother of three children. She was afflicted with some inflammation and ulceration of the womb. Finally a diagnosis of cauliflower growth was made by a practitioner. The cervix was removed in February, 1900. She recovered and improved very much in health; menstruation continued regularly, but during the summer, about six months later, she again had trouble. On examination a recurrent growth was found. This was treated by curetting and strong cauterization, the latter being continuously and vigorously applied. Examination revealed a large uterus such as is found in cases of pregnancy at four and a half months, well marked placental bruit, enlargement of the breasts, etc. The upper end of the vagina was absolutely closed by a cicatrix, as is found after vaginal hysterectomy. There were two nodules, the size of a hazelnut and a bean. By allowing the pregnancy to continue the malignant growth would probably have closed up the vagina and a Cesarean section would be necessary, and the cancer would have so far advanced that there would be little chance for permanent recovery. Hence a prompt operation seemed necessary, but how? If there had been an opening he would have had the physicians insert a catheter and bring on premature labor a week before and then remove the uterus. Having the patient under chloroform he plunged a scissors into the place where he thought the os ought to be. By separating them and stretching the opening with his finger, he tore the sac. By enlarging the opening he had no further trouble in delivering the fetus. By pressing the womb the placenta was soon delivered, although the hemorrhage was profuse for a few minutes, but the uterus contracted firmly, and there was no further trouble. In tearing the opening he fortunately ruptured into the cul de sac. This served as a guide for him to work, and although the uterus was very large, he finished the operation and did a vaginal hysterectomy. Patient recovered and is well to-day.

Indications, Technic, and Remote Results of Salpingostomy and of Resection and Ignipuncture of the Ovaries.

Dr. A. Goldspohn, Chicago, read a paper on this subject, and presented tables of 104 cases. The conclusions of the author are as follows: 1. In patients who are not near the menopause and who are not tainted by tubercular or malignant disease, one or a part of one or both ovaries can frequently be preserved, with or without the retention of the corresponding tube, in the following conditions: (*a*) In follicular cystic degeneration or partially cirrhotic induration due to inflammatory processes or other circulatory disorders; (*b*), in extirpating parovarian cysts, dermoid and fibroid tumors with or without the uterus; (*c*) with great caution, in the extirpation of non-papillary glandular cystomata, that are devoid of surface papillomata and other evidences of malignancy. 2. Necessary for success in the resection of the uterine adnexa is the exercise of asepsis of the highest degree, and the use of a minimum amount of fine and readily absorbable suture material exclusively and judiciously, as to tension. 3. A generous median ventral incision provides the best access for the conservative treatment of the adnexa in cases where septic accumulations in the parts are not absent, and when extreme fixations of the parts abound. When these more extreme complications are not present and a retroversion of the uterus exists, the resection of the adnexa is most easily effected by way of the dilated internal inguinal rings in conjunction with a thorough Alexander operation. 4. Vaginal celiotomy does not provide a favorable access for conservative surgical treatment of ovaries and tubes. It does frequently admit of ignipuncture, but is not auspicious for resection of ovaries. 5. Resection, with the care and technic alluded to, is the m[illegible]al and most conservative measure. and should be pre[illegible] when the parts are sufficiently accessible without undue traction upon their lateral supports, and when asepsis in the surrounding wound and in the general execution is reasonably assured, otherwise thermo-cauterization is probably better.

Dr. C. C. Frederick, of Buffalo, N. Y., read a paper in which he narrated some very rare and old cases and experiences in pelvic and abdominal surgery, and the lessons they taught him.

Dr. Charles Greene Cumston, Boston, reported two cases of hour-glass stomach, and discussed the pathology and treatment.

Personal Experience with Uterine Fibromyomata.

Dr. Henry D. Ingraham, Buffalo, mentioned a large number of cases of uterine fibroids which he had treated by various methods during the past sixteen years. Although he had used ergot freely in many cases, it was only in a very few that it had any effect on the hemorrhage, and possibly hydrastis had in some cases. Stypticin had in his experience appeared to check the excessive flow better than any other drug. He had not obtained any special benefit from the use of the thyroid extract or desiccated mammary gland, and considered their use dangerous on account of their effects upon the general health of patients. He had formerly used electricity with benefit, but did not use it now as the results were not satisfactory. He had had seven cases of quite large fibroids complicated with pregnancy. In five, miscarriage occurred spontaneously. In one it was induced, and in the other the growth almost completely filled the pelvic cavity, the four and one-half months' fetus being above it, so that a hysterectomy was necessary. Patient recovered. One case was mentioned of an unmarried woman who was 64 years of age before the fibroid began to show signs of its existence. For some time it was dense and hard and grew slowly, but for the past few months it had become cystic and increased in size rapidly. This patient manifested several cerebral symptoms on three different occasions, which the author believed were due to some particles of the disintegrating tumor becoming detached, and were carried to the brain, producing these symptoms. On one occasion patient lost sense of motion and sensibility of the right side for over two weeks, and did not know the members of her own family for the same length of time. During the height of this attack the temperature was 101 F., and pulse 96. A year later she had a similar attack, and a few months ago another one, but milder, with no rise of pulse or temperature. He believed that fibromyomata, although considered benign in contradistinction to malignant growths, were by no means harmless, but exposed the patient to great and increasing risk. All cases of fibroids should be carefully watched. If they were not giving any trouble or increasing in size, they should be let alone, but the patient should be kept under observation. When they gave rise to trouble, or if the growth increased in size, then the proper thing to do was to remove it before dangerous complications occurred. If there were adhesions or necrosis of the tumor or pyosalpinx, then the danger of the operation was greatly increased. If cardiac disease or hydronephrosis resulted as a complication, the removal of the tumor would not relieve those conditions. Waiting for the menopause to relieve the diseased condition was often like holding out false hopes to the patient, as the trouble might become worse then than before, or it might all develop after that period, as was shown by the recital of the last case reported by the author. If any treatment was necessary and the patient was in a suitable condition, a radical operation should be done. There was no excuse, in his opinion, whatever for palliative or temporizing treatment at the present day.

Officers.

The following officers were elected for the ensuing year: President, Dr. Edwin Ricketts, Cincinnati, Ohio; vice-presidents, Drs. Charles Greene Cumston, Boston, and Miles F. Porter, Fort Wayne, Ind.; secretary, Dr. William Warren Potter, Buffalo, N. Y.; treasurer, Dr. X. O. Werder, Pittsburg, Pa.

Washington, D. C., was selected as the place for holding the next annual meeting in 1902.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

Treatment of the Breasts During Pregnancy and Lactation.

TO PREVENT SORE NIPPLES.

Beginning five or six weeks before the expected time of confinement and continuing its use daily until confinement, lanolin applied externally with friction every night is of great value. The nipple should be thoroughly washed in the morning with pure soap and water, then rinsed off and well dried. The following may be applied locally during the first week or two of nursing:

℞. Tinct. benzoini comp. ....ʒss 2|
Olei olivæ ....ʒii 8|
Lanolini ....ʒvi 24|

M. *Sig.*: To be applied after nursing, three or four times a day.

FISSURES OF THE NIPPLES.

That fissures of the nipples cause very great pain occasionally it is not necessary to state. These fissures are either located at the apex or base of the nipple and cause the mother great suffering when the infant attempts to nurse.

As has been stated by many authorities, cleanliness is the first thing to be observed. The breasts and nipples should be thoroughly washed with some antiseptic such as boric acid solution. This should be done both before and after nursing; the mouth of the infant should also receive proper attention so as to guarantee against any infection from that source. If only one nipple is involved it should be given a rest for a few days and the breast pump used to relieve the breast. An ointment composed of the following will be of great service to hasten the healing process.

℞. Bismuthi subnit. ....ʒiii 12|
Tinct. benzoini *comp. q. s. ad*..........℥i 32|

M. Sig.: To be applied locally night and morning.

Or an ointment composed as follows may be prescribed as used by Hirst:

℞. Iodoformi ....gr. x |66
Ung. zinci oxidi ....℥ss 16|
Ichthyol ....ʒi 4|
Lanolini
Glycerini, āā ....ʒiss 6|
Olei olivæ ....ʒiiss 10|

M. Sig.: Apply locally night and morning.

P. Grossman, Omaha, clinic, recommends the following:

℞. Bismuthi subgal. ....ʒii 8|
Olei ricini ....ʒii 8|

M. *Sig.*: Apply locally night and morning.

He states that it is not necessary to thoroughly cleanse the breast before the child receives the nourishment.

Teisseire, as noted in *Cyc. of Pract. Med.*, recommends orthoform dressings in treatment of fissured nipples. He dusts the powdered drug over the wound and covers it with a compressed layer of the remedy. Over it is placed a layer of absorbent cotton and rubber sheeting, the whole being kept in place by a bandage. Before nursing, the breast should be thoroughly cleansed with warm boric acid solution. The orthoform dressing renders an analgesic effect as well as a curative process.

TO PREVENT FISSURES.

The following application used twice daily will render the nipple and breast firm and less tender:

℞. Glycerol tannici
Aq. destil, āā ....℥i 32|

M. Sig.: Apply locally night and morning.

When the fissures have been formed they may be touched with the following solution:

℞.	Argenti nitratis	gr. x		66
	Aq. destil.	℥i	32	

M. Sig.: Apply locally with an applicator once every other day.

The following is of service as a wash:

℞.	Hydrarg. iodidi	gr. i		06
	Alcoholis	ʒvi	24	
	Glycerin			
	Aq. destil, āā	℥viii	256	

M. Sig.: Use as a wash night and morning.

MASTITIS.

Probably the first thing noticed in beginning mastitis is a hard mass, or what is ordinarily called a "cake breast." This may cause, at first, no subjective symptoms except probably when the infant is at the breast. In a short time the hard mass is painful upon pressure, redness may appear superficially, accompanied by swelling. This is followed by fluctuation. As soon as this is detected active procedures should be commenced at once. And at this point we can not speak too strongly against the applications of poultices in any form. On the other hand, when pus is detected it should be evacuated as early as possible. In making an incision it has been dwelt upon by many to make the incision radiating from the nipple toward the periphery as the spokes of a wheel radiate from the hub. In this way the lacteal ducts are not interfered with and the incision is devoid of any great danger. Drainage and thorough cleansing should be subsequently properly carried out.

Puerperal mastitis tends to recur with each confinement. Traumatic lesions also predispose to puerperal mastitis. Infected cracks or fissures of the nipple are by far the most frequent causes of mastitis. Dr. E. P. Davis recommends that the breast and nipple be washed with castile soap and warm water, the nipple drawn out by the thumb and finger and a suitable antiseptic ointment applied. Stasis of milk in the breast must be prevented. He recommends a solution of boracic acid to preserve the nipples in an aseptic condition. He also states that it is better to err on the side of too early incision than to delay too long. Under no circumstances should the child nurse the affected breast. The same germs which infect the breast may infect the gastro-intestinal tract of the infant.

C. S. Bacon, of Chicago, in an article in *New York Med. Jour.*, states that general precautions consist in washing thoroughly the nipple before nursing and bathing thoroughly with a 75 per cent. solution of alcohol, after nursing, to protect the nipple from abrasions and accidental infections from the mouth or skin of the child. He chooses alcohol as a disinfectant, because it is harmless to the child, and at the same time efficient. He also recommends the nipple shield as of great importance in the prevention as well as the cure of nipple wounds. If the nipple wounds do become infected, but no symptoms of general infection or involvement of the deeper breast, the local wound should be treated like wounds in any other part of the body. The application of cotton saturated with alcohol is usually sufficient, but the appearance of chills and fever indicates deeper infection of the breast. When these symptoms appear Dr. Bacon restricts nursing from the affected breast and supports the breast with a proper bandage. With this treatment he states that from 80 to 90 per cent. of the cases will terminate without abscess formation, and if an abscess does form it will be localized to one lobe as a rule. If pus formation is suspected he recommends that the hypodermic needle be used to determine its presence; and if the abscess is present, however small, it should be opened at once. If in doubt, continue the support and ice-bag to the breast. This will limit its formation and the pain. He denounces the treatment by poultices, which allows a considerable portion of the breast to become involved and broken down. He recommends that a few drops of Schleich's solution be injected beneath the skin, making the line of incision anesthetic. The pus should be washed out with sterilized water and small amount of sterilized gauze introduced for drainage. This may be ved in twenty-four hours and the wound kept open for one o days by irrigation, when it will usually close itself.

Dr. Rubeska, in *Centralblatt f. Gynekologie*, states that in 3152 nursing women he has observed 1244 cases of sore nipples. He recommends, as treatment, the use of compresses moistened with a 3 per cent. solution of boric acid and covered with gutta percha. He states that lactation was continued in almost all the cases, the nipple being simply protected with a shield. In three-fourths of the cases the trouble subsided within ten days, and mastitis developed in less than 2 per cent. of the cases. He further states that when mastitis did develop the breast was thoroughly disinfected, and compresses damp with a solution of bichlorid of mercury, one-half per cent. strength, were constantly applied for three hours; the first milk was drawn artificially with the pump and the ice-bag afterwards applied. If the signs of inflammation first developed with a chill followed by a high temperature accompanied with pain he immediately ordered an injection of a 3 per cent. solution of carbolic acid into the affected breast, as much as two or three Pravaz syringefuls being injected at one time. If the trouble began less severely this was not carried out unless the pain and temperature continued longer than forty-eight hours. He states that suppuration took place in only two cases following this treatment, and no harm was done in any case.

Hirst states that if the abscess is opened early one incision commonly suffices. If the case is neglected every pocket of pus must be opened and every sinus drained to secure a permanent cure. The incision should radiate from the nipple and the area of pigmentation should be avoided as far as possible or the incision should be confined wholly within this area as the pigmentation will follow the cut, disfiguring the breast. The abscess cavities should be compressed, after being opened, by a firm binder and the wound irrigated daily with sterile water.

In threatened mastitis the following ointment may be of benefit in some cases:

℞.	Ichthyol	ʒiv	16
	Ung. hydrarg.	ʒiv	16
	Ung. belladonnæ	℥ss	16
	Cerato plumbi subacetat.	℥i	32

M. Sig.: Apply locally three times daily.

Proper attention to elimination in such conditions as the foregoing should not be neglected. Elimination should be promoted by the bowels and kidneys. Salines should be administered until free action of the bowels is produced. The following may be used under the same conditions as the above:

℞.	Zinci oxidi		
	Ung. belladonnæ āā	℥ss	16
	Ichthyoli	ʒii	8

M. Sig: Apply locally twice or three times daily.

GALACTORRHEA.

The following is sometimes applied locally in connection with supporting treatment of the breast:

℞.	Ung. belladonnæ		
	Lanolini āā	ʒiv	16

M. Sig.: Apply locally twice daily.

Medicolegal.

Non-Expert Witnesses in Inquiries as to Sanity.—The Supreme Court of Alabama holds, in the murder case of Caddell vs. State, that on an inquiry of sanity or not, the rule applicable to non-expert witnesses is that opinions opposed to sanity are admissible only when stated in connection with the facts respecting the conduct, abnormal or otherwise, of the person whose sanity is questioned; but opinions affirming sanity may be based on a mere negation of unnatural or peculiar conduct, without a specification of facts.

No Damages Recoverable for Injuries to Unborn Child.—The Supreme Court of Rhode Island holds, in the case of

Gorman vs. Budlong, that one can not maintain an action for injuries received by him while in his mother's womb; and that, consequently, his next of kin can not maintain an action, after his death, therefor, under the statute of that state, which provides that whenever the death of a person shall be caused by the wrongful act, neglect, or default of another an action may be maintained for damages if he could have maintained one had death not ensued.

The Testimony of Paid Medical Experts.—The Supreme Court of Tennessee holds, in the case of Bateman vs. Ryder, that there was no error in the trial judge charging the jury that "the testimony of experts introduced for the purpose of establishing insanity or mental unsoundness, if paid for, should be received with great caution and carefully weighed by the jury," the judge charging further, upon this feature of the case, that "it was lawful and proper for an expert physician to charge a reasonable compensation or fee for his professional opinion or services."

Not Required to Refund Cost of Medical Treatment.—Without passing upon the question of whether or not it is necessary, as a condition precedent to the commencement of an action in a personal injury case where a release has been signed, that the money paid therefor should be refunded, it being alleged that the party was in such a condition when he signed it as not to understand what he was doing, the Supreme Court of Colorado holds, in Town of Colorado City vs. Liafe, that, no money having been received, the only consideration for the release being the furnishing of surgical and medical treatment and care at a hospital, it is not necessary for the injured party to ascertain the amount paid to third parties therefor in his behalf and to refund same before commencing his action. It thinks it enough, as well as proper, that the jury be instructed that if he is given a verdict the amount shown to have been paid for his benefit under the terms of the release should be charged against him.

Mental Injury from Wilful Wrong.—The first appellate division of the Supreme Court of New York holds, in the case of Williams vs. Underhill, that the rule that damages resulting from fright alone, or for mental suffering disconnected from other injuries, can not be recovered, applies only to actions based on negligence, and not to cases of wilful tort or wrongful acts. The reason for limiting liability in actions for negligence, it says, is founded in the principle of law governing such actions, namely, that the measure of damage shall be confined to the natural and probable consequences of the act or omission constituting the cause of action, while the distinction between such a case and one founded upon a wilful tort, such as an assault, is very clear. So, evidence having been admitted in this case, without objection, which tended to prove the commission of an assault, and that prior to the same the party suing for damages therefor had been a person of unusual mental strength, the court holds that it was error to exclude testimony offered to show the effect of the assault upon her mental condition, and of the medical treatment received by her therefor, even if she had limited her claim to damages for mental injuries resulting from fright alone.

Authority Required for Compulsory Vaccination.—As a question never before raised in that state, the Supreme Court of Michigan takes up, in the case of Mathews vs. Board of Education, that of the validity of compulsory vaccination of school children. It appears that in 1894 this Kalamazoo school-district board enacted the following rule: "No pupil shall be admitted into any public school who can not furnish satisfactory evidence that he or she has been vaccinated or otherwise secured against smallpox, and no pupil affected with any contagious disease, or coming from a house where such a disease exists, shall be allowed to remain in any public school." This rule continuing in force, a Christian Scientist brought this suit, denying its validity. The court, however, does not feel called upon to discuss the question of his religious scruples. It points out that, inasmuch as the law of the state makes it the duty of the child to attend school, and of the parent to send him, under penalty of fine or imprisonment, or both, the effect of the rule referred to would be to compel the vaccination of the child, or subject him and the parents to the penalties of the law, the practical result of which would be to give the board of education the right to compel compulsory vaccination, if the rule could be sustained. Wherefore, the legislature not having undertaken to give the board the power, when no epidemic of contagious disease exists or is imminent in the district, to pass a general, continuing rule which would have the effect of a general law excluding all pupils who will not submit to vaccination, the court, divided three to two on the proposition, holds that the school board exceeded its power. At the same time, it does not mean to intimate that during the prevalence of diphtheria or smallpox, or any other epidemic of contagious disease, in a school district, the board may not, under its general powers, temporarily close the schools, or temporarily say who shall be excluded from the schools until the epidemic has passed. Again, it says that in the absence of any statute authorizing compulsory vaccination, or which requires vaccination as one of the conditions of the right or privilege of attending the public schools, it thinks it can not be maintained that the rule relied upon was a valid exercise of the rightful powers of the State Board of Health. Its powers, though quite general in terms, must be held to be limited to the enforcement of some statute relating to some particular condition or emergency in respect to the public health; and, although they are to be fairly and liberally construed, yet the statute does not, either expressly or by fair implication, authorize the board to enact a rule or regulation which would have the force of a law changing the statute in relation to the admission, and right of pupils of a proper school age to attend the public schools. It is not a question, the court continues, as to what the legislature might do, under the police power, about requiring vaccination as a prerequisite to attending school; nor is it a question of whether the legislature could confer this power upon the school board. To lawfully exclude children from the public schools for the cause relied on requires such a change in the existing law as the legislature alone can make.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

Philadelphia Medical Journal, September 14.

1 The Employment of the Recuperative Power of the Heart as an Estimate of Its Functional Ability. Martin Mendelsohn.

2 *The Principles of Treatment of Tuberculous Laryngitis. St. Clair Thomson.

3 *The Treatment of Tuberculosis with Urea. Arthur H. Buch.

4 Undiluted Milk in the Chronic Gastroenteritis of Rachitic Infants. Maurice Ostheimer.

5 Unusual After-Effects of Snake Bite. Lawrence E. Holmes.

Medical Record (N. Y.), September 14.

6 The Origin and Formation of Fibroid Tumors of the Uterus. Mary A. Dixon Jones.

7 Some Observations on Modern Cardio-therapy. Homer Wakefield.

8 *The Functions of the Tonsils, with a Few Suggestions Regarding the Differential Diagnosis of Tonsillar Affections. R. C. Matheny.

9 A Unique Specimen of Vesical Calculi. F. C. Larimore.

American Medicine (Philadelphia), September 14:

10 Wounds of the Thoracic Duct Occurring in the Neck; Report of Two Cases; Résumé of Seventeen Cases. Dudley P. Allen and C. E. Briggs.

11 The Practical and Scientific Value of the Blood Examination to the Medical Man and Surgeon. (To be concluded.) Robert N. Willson.

12 Condition of Epileptics in Pennsylvania. Wharton Sinkler.

13 *Modern Experience vs. Ancient Tradition Concerning Alcohol as a Beverage and Medicine. H. D. Didama.

14 *Atropia as an Efficient Aid in Relieving Acute Pulmonary Edema. Charles O'Donovan.

15 A Note on Bacillus Coli Communis in a Possibly New Rôle as an Inhibitor of HCl in the Stomach. G. W. McCaskey.

16 The Eye Complications in a Case of Ankylostomiasis. Howard F. Hansell.

17 The Lane Lectures on the Social Aspects of Dermatology. Malcolm Morris.

18 Intraspinal Cocainization: A Critical Review of Some of the Most Salient Points in This Method of Analgesia, as It Applies to General Surgical Procedures. Burdett A. Terrett.

New York Medical Journal, September 14.

19 *The Lane Lectures on the Social Aspects of Dermatology. Malcolm Morris.
20 *Professor Max Schüller's Views on Malignancy. James Eddy Blake.
21 The Clinical Diagnosis of Carcinoma of the Esophagus, and the Technic of Gastrostomy. Charles G. Cumston.

Boston Medical and Surgical Journal, September 12.

22 The Use of Gynecology by the General Practitioner. Edward Reynolds.
23 Some Cases of Cancer Treated by the X-Rays. Francis H. Williams.
24 *General Anesthesia in Operation upon the Nose and Throat —Nitrous Oxid Chloroform and Ether. F. E. Hopkins.
25 *Eosinophile Leucocytes and Nuclein Bases. Edward T. Williams.
26 Discussion upon Climatic Treatment of Pulmonary Tuberculosis versus Home Sanatoria. S. G. Bonney.

Medical News (N. Y.), September 14.

27 A Case of Foreign Body in the Esophagus. Russell S. Fowler.
28 Infantile Atrophy. John Lovett Morse.
29 *The Treatment of Cystitis. Chas. Chassaignac.
30 Medicinal Treatment of Diabetes Mellitus. Archibald Dixon.

Cincinnati Lancet-Clinic, September 14.

31 *Rheumatic Fever in Children. E. W. Mitchell.
32 Small Ovarian Cyst with Rather Unusual After-Complications. Magnus A. Tate.

St. Louis Medical Review, September 14.

33 Open-air Treatment of Pulmonary Tuberculosis in Arizona. R. S. Slusher.

Northwestern Lancet (Minneapolis), Septemoer 1.

34 The Advance to Realism in Medicine. A Short History. Franklin Staples.
35 Inflammation of the Ear. L. H. Munger.
36 The Hospitals of Hamburg and Berlin. George G. Eitel.
37 Report of a Case of Acute Transverse Myelitis. E. H. Bayley.

Virginia Medical Semi-Monthly (Richmond), August 9.

38 *Malarial Infection and Its Prevention. Walter Shropshire.
39 The Positive Value of Antidiphtheritic Serum as a Remedial Agent, with Illustrative Cases. G. A. Davis.
40 *Ventral Fixation for Anterior Displacements of Uterus—An Original Operation. Jacob Michaux.

Medical Age (Detroit, Mich.), August 25.

41 *Some Observations on the Treatment of Hypertrophic Rhinitis. Charles M. Robertson.
42 Sarcoma of the Uterus, Involving Broad Ligaments, Mesentery, Intestine, Omentum, and Abdominal Wall, Including Rectus Muscles and Skin; Excisions; Recovery. P. D. Hughes.
43 Some Surgical Cases (Carcinoma of the Pyloric End of the Stomach, Etc.). (Continued.) N. Senn.

Louisville Monthly Journal of Medicine and Surgery, September.

44 *The Importance of Milk Modification for Infant Feeding. Henry E. Tuley.
45 *Stricture of the Male Urethra. Henry H. Koehler.
46 *Tubercular Peritonitis. B. C. Frazier.
47 *Typhoid Fever in Infancy. J. B. Kinnaird.

American Journal of the Medical Sciences (Philadelphia), September.

48 *Filarial Lymphatic Varix. Eugene L. Opie.
49 *Granular Degeneration of the Erythrocyte. C. Y. White and William Pepper.
50 Report of Interesting Case of Aneurysm of Internal Carotid Artery. Walter B. Johnson.
51 *Hydatid Disease of the Breast. Robert G. LeConte.
52 *A Contribution to the Pathological Anatomy of Sporadic Cretinism. Frederick A. Packard and Alfred Hand, Jr.
53 *Pseudomembranous Inflammation of the Mucous Membranes Caused by the Pneumococcus. Charles Cary and Irving P. Lyon.
54 *Acute Splenic Miliary Tuberculosis. D. D. Stewart.
55 Note Upon a Case of Cardia Duplex in a Turkey. Allen J. Smith.

Annals of Surgery (Philadelphia), September.

56 *The Blood Changes Induced by the Administration of Ether as an Anesthetic. John Chalmers DaCosta and Frederick J. Kalteyer.
57 *Studies of Blood in Its Relation to Surgical Diagnosis. Richard C. Cabot, John B. Blake and J. C. Hubbard.
58 *Frequency of Recurrence of Sarcoma. John A. Wyeth.
59 Teratoma of the Testis. William B. Coley and Bertram H. Buxton.
60 Sacculated Aneurysm of the Superior Profunda Humeri Artery. L. J. Hammond
61 *Fracture of the Skull. Walter Lathrop.

Pediatrics (N. Y.), September 1.

62 *The Treatment of Pott's Disease in Childhood by Continuous Over-Extension of the Spine. Royal Whitman.
63 Three Cases Treated with Antistreptococcus Serum. M. Girsdansky.

University of Pennsylvania Medical Bulletin (Philadelphia), September.

64 The Comparative Virulence of the Tubercle Bacillus from Human and Bovine Sources. Mazyck P. Ravenel.
65 *Aneurysm of the Thoracic Aorta of Traumatic Origin: Treatment by Introduction of Wire and Electricity. DeForest Willard.
66 Wax Models—Their Preparation and Uses. Jay F. Schamberg and J. Frank Wallis.
67 *The Case Method of Teaching. Charles H. Frazier.
68 1. On the Diagnosis of Diphtheria; 2. A Double Stain for the Bacillus Diphtheriæ. Robert L. Pitfield.

Buffalo Medical Journal, September.

69 *Tubercular Disease of the Spine and Hip and Early Symptoms of Hip-joint Disease and Treatment. A. M. Phelps.
70 *Local Anesthesia. F. C. Floeckinger.
71 *Cough and Its Treatment in Pulmonary and Laryngeal Tuberculosis. Henry Levien.
72 *On the Frequency of Asthenopia—Especially in America. Lucien Howe.
73 Preliminary Notes on a Case of Abdominal Aneurysm. Marshall Clinton.

Pennsylvania Medical Journal (Pittsburg), August.

74 Address, Berks County Medical Society. E. W. Frankhauser.
75 Foreign Bodies in the Rectum—Two Cases. L. W. Atlee.
76 How We Should Provide for Our Tubercular Patients; with Report of Cases. Chas. F. Spangler.
77 Hysteria—A Clinical Study of Twenty Cases. Theodore Diller.
78 Eye Strain. P. J. Kress.

Medical and Surgical Monitor (Indianapolis), August 15.

79 *Some Relations of the Profession to Diseases of the Ear. J. F. Barnhill.
80 Report of a Case of Amnesia. Is It Somnambulism? Wm. B. Fletcher.
81 A Few Practical Points on Ether Anesthesia. Thos. B. Eastman.
82 Constipation in Infants. Charles R. Sowder.
83 Report of a Case of Concussion of the Brain Followed by Compression. R. H. Richards.

Quarterly Journal of Inebriety (Hartford, Conn.). July.

84 *Shall We Continue Striving to Improve the Environment of the Poor and Render Sterile by Mutilation, or Electrocute the Degenerates to Prevent Their Propagation of Their Kind? or Shall We More Directly Prevent Both Poverty and Degeneracy by Removing Their Chief Causes? N. S. Davis.
85 Modern Experience vs. Ancient Tradition Concerning Alcohol as a Beverage and Medicine. H. D. Didama.
86 A Recrudescence of Alcohol Worship. John Madden.
87 Some Recent Researches on Alcohol; Their Bearing on Treatment. J. Mackie Whyte.
88 Is Alcohol a True Food? Charles R. Drysdale
89 Hydriatic Substitutes for Alcohol. J. H. Kellogg.
90 Alcohol in High Altitudes. E. Stuver.
91 The Pathology of Chronic Alcoholism. Henry J. Berkeley.
92 The Medical Profession and Total Abstinence. J. J. Ridge.
93 A Statistical Investigation into the Rôle of Alcohol in the Origin of Innate Imbecility. Dom. Bezzola.
94 The Poisonous Action of Alcohol in Some Nervous and Mental Diseases. Wagner V. Jauregg.

Journal of Medical Research (Boston), July.

95 *A Contribution to the Normal Histology and Pathology of the Hemolymph Glands. Aldred Scott Warthin.
96 *On Transplantation of Tumors. Leo Loeb.
97 On Progressive Changes in the Ova in Mammalian Ovaries. Leo Loeb.
98 A Preliminary Report Upon the Examination by Nissl's Method of Four Gasserian Ganglia Removed for Tic Douloureux. Frederick R. Bailey.
99 *Some Observations on the Biology of the Bacillus of the Pest. E. H. Wilson.
100 New Formation of Nerve Cells in a Cerebral Tumor-Neuroglioma. W. L. Worcester.
101 *The Frequency of Trichinosis in the United States. Herbert U. Williams.
102 On Certain Features of the Growth of Bacteria on Media Containing Sugars and Serum, with Remarks upon the Acid Production. E. Libman.
103 Suppurative Pylephlebitis, Associated with Anaerobic Micro-organisms. Charles Norris.
104 *The Origin of Gas and Gas Cysts of the Central Nervous System. William Travis Howard, Jr.
105 *The Action of Proteolytic Enzymes on Bacterial Toxines. E. R. Baldwin and P. A. Levine.

106 Bio-chemical Studies on the Bacillus Tuberculosis. P. A. Levine.
107 Cell Proliferation Under Pathological Conditions, with Special Reference to the Etiology of Tumors. Isaac Levin.
108 Streptococcus Mucosus (Nov. Spec.?) Pathogenic for Man and Animals. William T. Howard, Jr., and Roger C. Perkins.
109 Remark on Primary Endothelioma of Lung and Pleura, with Demonstrations. I. Adler.
110 *Studies upon Bacteriolysis and Typhoid Immunity. Mark W. Richardson.
111 *Morphological Varieties of Bacillus Diphtheriæ. Frederic P. Gorham.
112 Classification of Intestinal Bacteria. W. W. Ford.
113 Cholesteatomata of the Brain. John J. Thomas.
114 *Malta Fever: A Report of Four Cases of Malta Fever in the United States Army and Navy General Hospital, Hot Springs, Ark., Among Soldiers and Sailors Returned from Tropical Stations, with Remarks on the Serum Reaction in Malta Fever. Joseph J. Curry.
115 On Some Undescribed Lesions in Lymphosarcomatosis (Hodgkin's Disease). Chas. F. Martin.
116 The Increase of Elastic Tissue in the Lung in Chronic Passive Congestion. Richard M. Pearce.
117 Necroses of the Liver. F. B. Mallory.
118 Report of Nine Cases of Infection with Bacillus Pyocyaneus. Roger G. Perkins.
119 Use of Solid and Liquid Paraffins on the Surface of Culture Media to Insure Anaerobic Conditions. W. H. Park.

St. Paul Medical Journal, August.

120 The Organization of the Profession. William Davis.
121 *Importance of Lacerations of the Pelvic Floor and Their Repair. William E. Ground.
122 A Consideration of Graves' Disease, and the Theories of Its Causation. George E. Senkler.
123 A New Absorbable Suture Material. E. M. Lundholm.
124 Medullary Narcosis. C. P. Thomas.

September.

125 *A Plea for Conservatism in the Treatment of Inflammatory Conditions of the Tubes and Ovaries. J. L. Rothrock.
126 *Is Cholecysto-colostomy a Feasible and Rational Operation? A. Shimonek.
127 Intussusception During the First Year of Infancy. Edward D. Keyes.
128 Report of a Case of Paralysis of Bladder and Rectum from Injury. A. L. Baker.
129 Menthol in the Treatment of Gastritis, with Report of Cases. G. E. Campbell.

Illinois Medical Journal (Springfield), September.

130 *Uric Acid Fallacies. Frank Billings.
131 Surgical Intervention in Intestinal Perforation in Typhoid Fever. George L. Eyster.
132 Doctors' Contribution to Science in the Past 100 Years. James L. Reat.
133 *Angioneurosis. Frank P. Norbury.
134 Potable Water. Arthur W. Palmer.

Inter-State Medical Journal (St. Louis), August.

135 Locomotor Ataxia. D. R. Brower.
136 The General Practitioner and Ophthalmology. John Green, Jr.
137 Erosions of the Stomach. M. D. Schmalhorst.
138 Intestinal Obstruction Following Abdominal Section. Edward W. Lee.
139 A Mildly Inflammatory Condition of the Skin Covered by Green Scales Probably Produced by the Bacillus Pyocyaneus. Martin F. Engman.

St. Louis Courier of Medicine, August.

140 *Congenital Dislocation of the Hip. E. H. Bradford.
141 A Study in Heredity. Alice M. Smith.
142 Etiology of Typhoid Fever, and Treatment in Private Practice. Granville E. Dickinson.
143 Ptosis of the Liver. Augustus A. Eshner.
144 Duodenal Stenosis Due to Gallstones; Report of a Case. Albert E. Taussig.
145 Tetanus Neonatorum; Report of a Case that Recovered. J. C. Falk.

International Medical Magazine (N. Y.), August.

146 Quantitative Determination of Urea. A. Robin.
147 Indications for Trephining the Mastoid Process. E. B. Gleason.
148 The Use of Chloretone in Epilepsy. D. J. McCarthy.
149 Points in Antepartum Hygiene. Wilmer Krusen.
150 Chronic Diarrhea, Due to Rectal Disease. (To be continued.) Samuel G. Gant.
151 The Prognosis and Treatment of Chronic Intestinal Catarrh. Boardman Reed.

Southern Medical Journal (La Grange, N. C.), August.

152 Treatment of Fistula in Ano. James M. Parrott.
153 The Office Treatment of Rectal Diseases. R. D. Mason.
154 Washing the Blood in Acute Uremia. Charles E. Nammac.

Journal of Medicine and Science (Portland, Me.), August.

155 The Woman of the Tenement and Her Three Great Enemies—Ignorance, Alcoholism and Tuberculosis. S. A. Knopf.
156 Mind. F. A. Hanson.

Bulletin of the Johns Hopkins Hospital (Baltimore), August.

157 The Medicine and Doctors of Horace. Eugene F. Cordell.
158 A Historical Note Upon Diphtheria as Carriers of Diseases—Pare-Declat. Howard A. Kelly.
159 The Fiftieth Anniversary of the Invention of the Ophthalmoscope. Harry Friedenwald.
160 The First Nephrectomy and the First Cholecystotomy, with a Sketch of the Lives of Drs. Erastus B. Wolcott and John S. Bobbs. Martin B. Tinker.
161 Measurement of the External Urethral Orifice. G. Brown Miller.
162 Tendon Transplantation. Sydney M. Cone.

The Physician and Surgeon (Detroit and Ann Arbor), July.

163 *The Etiology of Gallstones. Victor C. Vaughan.
164 *Clinical History and Diagnosis of Gallstones. William F. Metcalf.
165 A Symposium on Genito-urinary Diseases; Etiologic Factors in Gonorrhea. Thomas S. Burr.
166 Gonorrhea in Women. James G. Lynds.
167 Syphilitic Onychia. Frederic W. Robbins.
168 Bacteriologic Findings in Cystitis. Conrad George, Jr.
169 Sequelæ of Gonorrhea. Cyrenus G. Darling.
170 Treatment of Acute Specific Urethritis. Ralph H. Spencer.
171 Repair of the Vaginal Outlet at the Time of Labor. Richard R. Smith.

Indiana Medical Journal (Indianapolis), September.

172 *The Dry Method of Surgery. Edwin Walker.
173 Report of a Case of Pistol-Shot Perforation of the Intestines—Laparotomy and Recovery. John C. Sexton.
174 Aneurysm of the Cervical Portion of the Vertebral Artery. I. N. Trent.
175 Foreign Bodies in the Lungs. Theodore Potter.
176 Corning's Anesthesia Among the Insane. S. R. Cunningham.

New Orleans Medical and Surgical Journal, September.

177 *The Mosquitoes and Their Relation to Disease. Geo. E. Beyer.
178 *Some Observations on the Varieties and Habits of the Mosquitoes of New Orleans, and the Remedies. H. A. Veazie.
179 Intra-peritoneal Abscess of the Abdomen, Containing Pure Culture of Bacillus Typhosus—A Sequel of Typhoid Fever—Recovery. L. G. LeBeuf.

AMERICAN.

2. **Tuberculous Laryngitis.**—Thomson recapitulates the principles to be borne in mind in tuberculosis of the larynx, as follows: Pathology and clinical experience show that in the majority of cases the focus of infection is near or in the crico-arytenoid joint. Many cases present themselves only at the stage when local treatment is incapable of producing cure and we should keep the principle of doing no harm constantly before us in this affection. The most rational principle, according to our present knowledge, is to make an early diagnosis in its incipiency. Any suspicious laryngeal catarrh should be treated seriously on even a presumptive diagnosis. Once diagnosed, the patient should be treated on the principles laid down in modern sanatoria. Symptomatic treatment should be directed to any irritative, catarrhal or obstructive condition of the air passages. Silence should also be enjoined, the disuse of the voice being in proportion to the degree in which the focus of infiltration approaches or interferes with the arytenoid joint. Where the situation or extent of disease does not warrant an expectation of complete arrest of the process, treatment should be symptomatic, and sanatorium methods are unnecessary.

3. **Urea in Tuberculosis.**—After mentioning the general dissemination of tubercle bacilli and the universal exposure to it, Buch remarks that most of us must have some vito- From the observation that the kidneys are practically immune to any ordinary infection, and it must be a substance or element that is not harmful or foreign to the human organism. From the observation that the kidneys are practically immune to phthisis, Harper of Nottingham concluded to prescribe pure urea with a view of increasing the amount of urea and uric acid, and Buch follows this suggestion in his present paper, holding that urea is probably a substance which has something to do with this immunity. While it is impossible to understand precisely why and how it causes beneficial effects, he thinks there is sufficient clinical evidence already to show that it is beneficial, and he reports seven cases of tubercle infection that were treated with good results: either cured or with more or less disappearance of symptoms. In all the other cases in which he has used the treatment he had had similar good results.

8. **Functions of the Tonsils.**—Matheny pleads for the preservation of the tonsils, holding that these are really protective organs, ranged around the pharynx to protect the system against infections which may enter by that route. He does not admit that simply because a tonsil projects into the pharynx beyond the level of the faucial pillars, it is hypertrophied, or even if it is hypertrophied that it is dangerously pathologic. The question is whether it has lost its function and is inimical to life, and he lays down the conditions under which excision is justified, including mechanical obstruction produced either of the pharynx or Eustachian tube, and specially liability to recurring attacks of tonsillitis, where the function of the organs has been destroyed and degeneration has taken place, a condition in which the crypts have become filled with caseous matter, cases where lacunar ulcerations are present, when a quinsy habit has been acquired, cases of malignant disease of lupus or tuberculosis of the tonsils and where enlarged tonsils interfere with voice production. Also in some cases after the age of puberty there sometimes remains more or less fibrous tissue, occupying the tonsillar space which has lost its lymphoid characteristics, and partakes of the nature of a foreign growth inimical to comfort. The differential diagnoses of several of the different disorders given, such as acute follicular tonsillitis, herpetic tonsillitis, and ulcerative lacunar tonsillitis.

13. **Alcohol.**—Didama's article argues against the use of alcohol even in moderate doses, not only as a beverage, but also in medical treatment. He finds from his own personal experience that the non-alcoholic treatment of any disease is far more satisfactory than the alcoholic management formerly employed.

14. **Atropia in Pulmonary Edema.**—O'Donovan finds that atropia is a remedy that rapidly contracts the vessels, powerfully stimulates the sympathetic system, increases the force of the heart's beat, raises arterial tension, stimulates the respiratory centers, and dries up the secretions of the skin and mucous membrane. Its physiologic action can be easily gauged by watching the amount of dilatation of the pupil. It is well to supplement it with some drug that acts promptly and surely as a direct stimulant to the heart, strychnia preferably. In cases of acute pulmonary edema he has seen relief from the hypodermic injection of 1/100 of a grain of atropia with 1/50 of a grain of strychnin sulphate so immediate and complete that it seemed like magic. The pulse should be watched to see that the effect is not merely transitory. Time should not be wasted on remedies given through the stomach, but the hypodermic should be used at once.

19.—See also title 17.

20. **Malignancy.**—Blake gives an abstract of the recent work by Professor Schüller of Berlin, entitled "Die Parasiten in Krebs und Sarkom," in which he holds that he has found a parasite which can be grown in pure culture, readily identified, occurs invariably in tumors and is reproduced by inoculation. It certainly can not be identified with blastomycetes, but apparently belongs to a class of animal parasites of which practically nothing is known. Certain researches of the author tend to show that the non-malignant tumors are produced by somewhat similar parasites belonging to the same class, but under certain conditions they are transformed into the malignant form, or assume malignant qualities which result in the same proliferation of cells. The researches of Schüller tend to prove the infectious nature of the disease, but how it is propagated is absolutely unknown. Analogy would suggest that some form of the organism must exist outside of the body and many histories tend to confirm this view, but it remains for future study to settle this point. The parasite seems very sensitive to cold and ordinary antiseptics, therefore, the danger of infection during an operation must be slight, though the continued association with an infected person is more open to question.

25. **Eosinophilia.**—Williams calls attention to the association between eosinophile leucocytes and the spermine crystals first noted by Charcot and Leyden, and suggests that this may have a pathologic importance as indicating the decomposition of nuclein in the body. As to what cells are being decomposed it is not always easy to say.

29. **Cystitis.**—The treatment of cystitis depends upon the forms of inflammation, and Chassaignac, before taking these up seriatim, mentions certain general methods, such as rest, which is the more important the more acute the case; diet, which should be non-irritative, alcohol being excluded, the use of laxatives and baths; hot applications over the bladder, and intravesical irrigations and alkalines to diminish the normal acidity of the urine; anodynes and urinary antiseptics are also useful in the majority of cases, and the above measures are applicable in all stages and in all forms of cystitis. In gonorrheal cystitis, specific remedies such as salol, sandalwood oil, local treatment with potassium permanganate, etc., are advised. In the tuberculous form the prognosis is not good. He thinks that if ulceration is present, the patient's general condition being fair, a suprapubic cystotomy which will facilitate curettage and topical applications is advisable. The cystitis of stricture, prostatitis, calculus and tumor should be treated in addition to the general measures by the treatment of the local lesion. In traumatic cystitis the special indication is to keep the organ well drained in order to avoid complications due to leakage. Cystitis from direct infection is usually due to lack of care in the treatment and the precautions should be prophylactic. When the inflammation travels downward from the kidneys or ureter, only temporary results will follow local treatment of the bladder. Healing of the ureter or kidney and removal of these organs if necessary, are the only means of producing a cure. In cases of cystitis from irritants taken internally, their stoppage usually ends the disease.

31. **Rheumatism in Children.**—Several patients suffering from rheumatism in the same family are noticed by Mitchell who thinks that these indicate the infectious character of the disease. Three of the cases were children. He points out the special characters of the disorder in young patients and emphasizes the importance of protection of the heart and of guarding patients from relapses and recurrences after the first attack.

38. **Malaria.**—The treatment suggested for malaria by Shropshire is, first, "Stop every case of malaria at once by adequate doses of quinin, for the longer it runs the greater the number of gametocytes formed in the blood, and the greater danger is the patient as an infector. By adequate doses I mean not less than two grams of quinin, and that either in an acid medium, or followed by an acid that will make the medium acid after it is taken; for quinin will not absorb in an alkaline medium. When the paroxysms are broken the patient should be required to take one gram at bedtime and half a gram the next morning on every sixth day for two months or more, and to sleep under mosquito netting or in well-screened houses the remainder of the warm season in our country. Urge the drainage of all places calculated to afford larval development of the mosquito, and if drainage is impractical, treat them once a week with petroleum, even Beaumont oil would do." In addition, he says educate your patients up to these requirements and teach them that curing each case promptly lessens the danger to other members of the family and community.

40. **Ventral Fixation.**—The operation here claimed as original by Michaux is as follows: The abdomen was opened in the median line, the uterus taken out and carried somewhat back, the cervix was then dilated by an assistant, the organ was then put in the usual position for ventral fixation and stitched with two sutures to the lower end of the abdominal wound, but a little higher up than is done when the operation is undertaken for the relief of posterior displacements, with a view of straightening out the bend in the canal.

41. **Hyperthropic Rhinitis.**—The special points deduced from Robertson's consideration of the newer methods of treating this condition are: The uselessness of sprays, galvanocauteries, etc. 2. Where growths exist they should be treated as growths which appear elsewhere. 3. The saving of all the

mucous sinus tissue possible, still securing breathing space. 4. The advantages of the use of suprarenal capsule. 5. The absence of danger of synechiæ, due to cautery, etc. 6. The use of dry pledgets of cotton and the disuse of all others. 7. The great advantage of the greased gauze as a surgical dressing in the nose over old methods. 8. The danger in the use of cocain lessened by the use of suprarenal extract. 9. The disappearance of nasopharyngitis after the nose becomes ventilated.

44.—See abstract in THE JOURNAL, xxxvi, p. 1726.

45.—Ibid.

46.—Ibid., p. 1727.

47.—Ibid., p. 1726.

48. **Filarial Lymphatic Varix.**—There seems to be little doubt that this disease prevails to a limited extent in the Southern States, and may be acquired in this country. It has also been observed even as far north as Pennsylvania. Opie reports a case at length with postmortem findings. He calls attention to the fact that the lymphatic vessels throughout the varix were filled with blood and not with lymph, suggesting regurgitation at some point of connection between the venous and lymph systems.

49. **Glandular Degeneration of the Erythrocyte.**—The conclusions arrived at by White and Pepper are: "1. The granules are a constant finding in cases of lead-poisoning, and appear very early in cases under the influence of lead salts long before subjective or other objective symptoms can be demonstrated. 2. The granules disappear in cases of chronic lead-poisoning as the convalescence is established. 3. Apparently lead does not produce an immunity, as one of the cases worked for twenty-four years, another for twenty years, without having pronounced symptoms of lead-poisoning, and in both of these cases the granules were present in moderate numbers. 4. The granules may be produced experimentally in dogs, appearing in a very few days after the beginning of the experiment, and increasing as the intoxication becomes severe. 5. The granules in the experimental cases are rather fine, and show a tendency to clump at first; later, all varieties appear. 6. We believe these granules to be a true degeneration of the erythrocyte and having no relation to nuclear fragmentation or to polychromatophilia."

51. **Hydatid Disease of the Breast.**—Leconte reports a case occurring in a mulatto girl, aged 27, which was apparently the first of its kind in this country. He tabulates the published cases and finds that the disease is confined to women usually in early maturity or from the age of puberty to the climacteric. It is characterized by the appearance of a small, hard, painless tumor situated in any part of the surrounding tissue of the breast, freely movable and slow in growth. The firmness continues until it attains considerable size and even then its cystic nature is not apparent. The enlargement of the axillary glands, pain, irregular outline, and adhesions to the skin are characteristic of inflammation outside the sac and degenerative change leading ultimately to the death of the organism and spontaneous cure. The diagnosis is difficult and malignant growth often seems probable. The treatment should be always operative.

52. **Sporadic Cretinism.**—After reporting a case Packard and Hand call attention to certain points which seem to them of interest, namely, the rapid improvement under the use of specific drugs, thyroid extract, though the patient finally succumbed to acute disease, the system seeming unresistant. Besides the thyroid changes there was also an abnormally large hypophysis, a condition which has not been very frequent in such cases. Another point of special interest is the calcareous infiltration of the blood vessels of the thyroid which seems not to have been mentioned in the literature of similar cases.

53. **Pneumococcal Mucous Inflammation.**—The points of interest in the case reported by Carey and Lyon are the occurrence during the course of an attack of lobar pneumonia in a boy of 11 years, of a profuse pseudomembranous exudation of nearly all the mucous surfaces of the body open to inspection, caused by the pneumococcus. The case also showed signs of excessive adhesive pleuritis and marked and continued tympanites with discharge of membranous shreds in the stools, suggesting that the fibrinous process involved also the pleura and gastro-intestinal tract. In other respects the case was not remarkable, terminating by gradual lysis with recovery.

54. **Splenic Miliary Tuberculosis.**—Stewart reports the second case on record of splenic miliary tuberculosis apparently due to contagion. The patient had nursed a consumptive while suffering from the after-effects of la grippe, with reduction of bodily resistance. The patient's room was damp and cold. The nurse was constantly in attendance, lost much sleep and was poorly fed.

56. **Blood Changes from Ether.**—The assertion made many years ago that anesthesia has a destructive influence upon the blood has been the cause of experiments by various investigators and Da Costa and Kalteyer report the results of their own examinations in 50 cases, also of experiments on animals. The conclusions to which they arrive are given in substance as follows: 1. The number of red corpuscles is influenced by many factors associated with and accompanying the anesthetic state. The character of the change is, as a rule, polycythemia, rarely, an oligocythemia. These factors may be grouped into three classes. In each class when analyzed separately is found cause capable of producing an increase in the number of colored corpuscles. 2. The nature of this polycythemia seems best explained by a lessening of the watery element of the plasma, thereby reducing the total volume of liquor sanguinis, and causing concentration of the blood. They think it reasonable to infer that the polycythemia is not specially influenced by excessive proliferative changes which probably occur in the hematopoietic tissues. The increased blood production is an effort of Nature to rapidly restore the destroyed cells. 3. The three important factors incident to the polycythemia are (a) The period of preparatory operative treatment; (b) the anesthetic state; (c) the post-operative stage. 4. The blood inspissation is, as a rule, most pronounced immediately after the termination of the anesthetic stage. In some cases the anhydremia may be increased by each succeeding factor, or one of these factors may exceed the other. The variation existing between the plasma and corpuscles, though temporary, should be regarded as too pronounced to be within the physiologic limits. The relative increase in the number of erythrocytes is generally still present sometime after the operation, but not infrequently the readjustment occurs before this, and an oligocythemia may be present. 5. The hemoglobin is always reduced absolutely; in some instances there is an apparent increase, but this is never parallel with the rise in the number of red-blood cells. The individual corpuscular hemoglobin value is therefore reduced. This reduction in the color value of the chromocytes is most striking when compared with the blood decimal, determined sometime after the operation. We must conclude that etherization produces increased hemolysis, and in Nature's effort to rapidly replace the destroyed corpuscles, the regenerated cells are imperfectly supplied with hemoglobin. 6. The duration of the anesthetic state and the amount of ether may influence the blood changes; but the extent of the disturbances could not be determined on account of the many modifying factors. 7. The amount of blood loss, as encountered in this series of cases, does not seem to affect the blood. 8. Whenever possible, one or more blood examinations should be made before giving the general anesthetic, and these before preparatory treatment has been instituted. On account of the hemolysis which is shown by the fall in the corpuscular hemoglobin after operation, a very low percentage of hemoglobin must be regarded as a contra-indication to general anesthesia. The amount which should be regarded as a positive contra-indication is uncertain, and the authors think that below 50 per cent. is a dangerous level. In malignant disease and in cases where surgery might prolong life briefly, but can not cure, operation should not be performed under general anesthesia when the hemoglobin is below 50 per cent. They operated in two cases where it was below 40 per cent.,

but in each case a vital emergency existed, and in each case death on the table was narrowly averted. Mikulicz gives 30 per cent. as the lowest level at which operation should be attempted, but the authors give 40, excepting under stress or absolute necessity. In case of low percentage of hemoglobin local anesthesia should be employed whenever possible and in any case where the percentage is low, the ordinary preparatory measures should be employed in every way to avoid creating undue drain upon the blood. The anesthesia should be entrusted to an experienced hand and as little anesthetic used as possible. The operation should be performed rapidly, the proper measures taken to bring about reaction after it is completed, and oxygen should be inhaled to remove the ether quickly from the lungs and blood.

57.—See abstract in THE JOURNAL, xxxvi, p. 1490.

58. **Sarcoma.**—Wyeth calls attention to the malignancy of sarcomas and suggests that in his own practice he can recall but two cases that could in the strictest sense be called cured. He has collected the statistics of a considerable number of cases, including those reported by Chavasse, and finds comparatively few in which recurrence did not take place. The two cases mentioned by him as cured are reported at length.

61. **Fracture of the Skull.**—In concluding, Lathrop says that fracture, whether compound, depressed, or comminuted, should be treated by operation. In all simple fractures where the slightest indication of intracranial pressure or hemorrhage is present, operate. Even simple fractures followed by no symptoms need watching, and especial care to the general system. The prognosis in fractured skull is to be guarded, and to be guided by subsequent development. An abnormally low temperature followed by rapid rise is a bad sign, and coma, paralysis, deep, irregular breathing, and dilatation of the pupil are nearly always of fatal significance. A temperature at or above normal rising one or two degrees with regular respiration and full or slightly accelerated pulse is usually favorable.

62. **Pott's Disease.**—The object of Whitman's paper is to advance the proposition that horizontal fixation should be the routine treatment during the destructive stage of Pott's disease in early childhood, a doctrine which is not generally taught nor accepted.

65. **Aortic Aneurysm.**—After reporting a case in which, nine weeks after the operation, the man was well enough to leave the hospital with good consolidation of the anterior portion of the aneurysmal sac after the introduction of wire by the Corradi-Stewart method, Willard discusses the subject and analyzes the reported cases. He thinks while the operation produces few permanent cures, it at least lengthens life, and in all of those who survive the immediate effects relieves the individual symptoms. Considering that these cases are fatal if left alone, these results are certainly satisfactory. To conclude, he says that, in his opinion, it offers a more reasonable hope of success in bad cases of thoracic aortic aneurysm than any other method yet devised.

67.—See editorial in THE JOURNAL of September 21, p. 777.

69. **Tuberculous Disease of the Spine and Hip.**—Phelps describes the condition in detail and points out the approved methods of treatment, illustrating the orthopedic apparatus. The importance of symptoms is given by him in the following order: 1. Limit of motion. 2. Deformity with apparent or real shortening. 3. Limp. 4. Atrophy and bone disease. 5. Pain in the knee with absence of local disease. 6. Pain on joint pressure. 7. Night cries. 8. Flattening of buttock. 9. Heat. 10. Swelling. He opposes the use of the long traction splint and favors the use of the plaster-of-Paris without passive motion. We have outgrown the idea that fixation will produce anchylosis, but he also gives descriptions and illustrations of perineal crutches used by himself, which meet the indications of fixation and traction in the line of the neck without absolutely confining the patient. We should operate in case of tuberculous abscess whenever the capsule is ruptured, in rapid osteomyelitis, in all tense abscesses and wherever necrosed and carious bone is present; also in rapidly increasing abscess of the joint filled with tuberculous purulent material, when the abscesses are repeated in occurrence and in any case with rise of temperature; also whenever there is doubt as regards the diagnosis.

70. **Local Anesthesia.**—Floeckinger credits Corning with the first discovery of the method of local anesthesia, it having been subsequently developed by Oberst, Schleich, Braun and others, and describes his method of applying it in various conditions.

71. **Cough.**—The conclusions of Levien's article are that: "1. Cough, though one of many features in the make-up of tuberculous affections of the lungs and larynx should, however, receive special attention at the hands of the physician, because it is the most distressing and exhausting factor. 2. Of all the remedies and drugs in our experience, which would tend to ameliorate and suppress cough, we find in glyco-heroin an agent which to all appearances is a remedy par excellence, and we recommend its further trial."

72. **Asthenopia.**—According to Howe, asthenopia is more frequent in this country than abroad, which he attributes to the prevalent carelessness in the use of the eyes, overstrain in business, indigestion, etc. He also finds that a larger number of persons are relieved in this country; the American seeks relief in glasses earlier than do foreigners. The average American practitioner is better fitted to detect and meet the conditions and American ophthalmologists and opticians are better supplied with diagnostic appliances and stock for such cases.

79. **Ear Disease.**—The neglect of aural affections by the general practitioner is deplored by Barnhill, who pleads for a better natural understanding between him and the aural specialist. The common indifference of the public to these disorders, careless statements by physicians to patients, and the comparative lack of aggressiveness of otologists in presenting the importance of their work are, he thinks, responsible for the present state of things. Careless dismissal of a case with an ear-drops prescription and promise that a child will outgrow it, are causes of much later trouble. Morris' remark that if the graves of those who died of neglected appendicitis were marked with lights, graveyards would be well lighted, is applied by Barnhill to ear disease. He insists on the importance of attention to the patency of the Eustachian tube, and of early incision of the drum when needed in cases of acute aural disease. In chronic otorrhea the family physician is justified in attempting to treat it for a time, but after a few weeks' ineffectual trial he should call in the aurist.

81. **Ether Anesthesia.**—Eastman advises warning the patient that he will experience unusual sensations, choking, etc., but he must pay no attention to them. The best inhaler is that with the largest evaporating surface. Ether should never be used except from a freshly opened can, the room must be quiet, and the anesthetizing is best done in the patient's room. The more rapidly anesthesia is produced the better. A competent anesthetizer can do it safely in eight minutes. Lower the inhaler gradually on to the face, thus avoiding shock to the mucous membrane. Do not test reflexes by jabbing finger into the eye; the respiration will, if watched, give sufficient information. After a short time the respiration will apparently stop, but if the pulse continues good, this ought not to alarm. The administration may be continued quietly and all will be well.

84.—This article appeared in THE JOURNAL of July 6, p. 1

95. **Hemolymph Glands.**—The anatomy and histology of these glands is described by Warthin, who recognizes two types which he classes as the splenolymph glands and the marrowlymph glands, though all sorts of transition forms are found between the two. He notices the pathologic conditions which may affect these, such as pyemia, anemia in the various forms, etc. Under normal conditions they are most probably concerned in hemolysis and leucocyte formation and play but little part, if any, in formation of red blood cells. Study of these glands he thinks points to a new and important line of

investigation as regards the solution of problems relative to blood formation, and pathologic conditions of the blood and blood-forming organs.

96. **Tumor Transplantation.**—Loeb details experiments which he has performed in an attempt to transplant cystic sarcoma from the thyroid of a white rat into some 150 other animals and describes at length the changes observed. All the successful cases were in rats; the experiments on guinea-pigs failed. The probability is that in every case tumor cells were transplanted and started a new growth. The possibility, however, of transplantation of micro-organisms as the cause of tumor growth can not, he thinks, be overlooked.

99. **Pest Bacillus.**—From experiments in the Hoagland Laboratory, Wilson concludes that probably the most important points in suspected cases of pest bacillus are the stalactite test, its behavior on salt agar, and the vaccination of rats and guinea-pigs with suspected material. Though there is no positive characteristic by which the bacilli of the pest can be hurriedly identified, one can, by these means, be reasonably certain of its identity.

101. **Trichinosis.**—According to Williams' investigations, it seems probable that many cases of old trichinosis escape detection at autopsies. In 27 cases out of 505 unselected autopsies in the adult human subject, trichinosis was present, all having died of other disease than trichinosis. In some of the cases the infection was extensive, in others very slight. The birth-places of the subjects included almost all the important countries of North America and Europe. A very large percentage of the cases occurred in subjects that had been insane.

104. **Gas Cysts.**—Howard believes that there should be more frequent and careful examination of the brain at autopsies; especially in cases of general gaseous emphysema it would probably show that gas cysts are more common than generally supposed.

105. **Proteolytic Enzymes on Bacterial Toxins.**—Baldwin and Levene have experimented on cases of proteolytic enzymes and neutralizing bacterial toxins, it being well known that many bacterial toxins ingested by the mouth lose their toxicity. They find that the diphtheria and tetanus toxins are both digested and not simply neutralized by the three proteolytic enzymes. In regard to tuberculin it may be stated in a general way that trypsin and pepsin digestion weaken its specific activity. Trypsin on prolonged digestion is able to destroy all the activity of tuberculin, while this could not be achieved by pepsin. He therefore thinks that tuberculin is a specific substance of the nature of a nucleo-proteid, the latter being the reason for its being more easily destroyed by trypsin than by pepsin.

110. **Bacteriolysis and Typhoid Immunity.**—While he does not claim his studies are complete, Richardson thinks the following conclusions may be made or suggested: "1. *In* typhoid fever Nature produces a cure through bactericidal agents acting upon the specific bacilli. These agents are produced by body cells, especially those of the lymphatic apparatus, and are found in varying amounts in the blood. 2. These protective agents are at least two in number, a specific immune element and a non-specific normal element or ferment. 3. It is the function of the immune element to bind the complement or ferment to the bacterial cell, which is then destroyed. 4. In the earlier and middle stages of the disease the immune body may apparently be present in large amount, and yet be of little value because of the absence of the complement. 5. In the stage of convalescence or falling temperature the normal element returns apparently to the blood, and a corresponding destruction of bacilli takes place. Further, inasmuch as this marked destruction of bacilli must set free an excess of typhoid toxin contained in the bacterial cells, we have in this fact a possible explanation of the marked remissions of temperature seen clinically in the fourth week of the disease. 6. Inasmuch as the addition of normal serum to the inactive serum of the sick typhoid patient will, in most instances, make that serum more powerful, in fact, make it very similar to the serum found in the fourth week, we should be justified, theoretically, in treating such patients with normal serum. 7. It will probably be found, however, that in certain cases the blood of the patient will lack both immune and normal elements, both of which will have to be supplied. Just what elements will be necessary can be determined probably by submitting the patient's blood to tests similar to those just described. 8. The blood of a normal individual may, under conditions described above, have very marked destructive power upon typhoid bacilli. This power is due, undoubtedly, to substances very similar to those found in typhoid serum. Their relation to the subject of natural immunity is, of course, of the greatest importance, and needs much further study. 9. The principles set forth above may apply to infection other than typhoid. This question should be investigated."

111. **Bacillus Diphtheria.**—The morphologic varieties of bacillus diphtheriæ have been studied by Gorham, who finds that his results agree with those of Westbrook that "(*a*) Granular types are usually the most predominant forms at the outset of the disease. (*b*) The granular types usually give place wholly or in part to barred and solid types shortly before the disappearance of diphtheria-like organisms. (*c*) Solid types may sometimes be replaced by granular types when convalescence is established, just before the throat is cleared of diphtheria-like bacilli." He also adds the following: "1. That diphtheria-like bacilli are more frequent in the nose than in the throat. 2. That there are diphtheria-like bacilli in the noses and throats of a large percentage of apparently healthy persons. 3. That by a careful study and classification of the various forms of bacillus diphtheriæ, many morphologic varieties may be recognized. 4. That the change from the granular or barred type to the solid staining types seems to take place under the influence of the body fluids of a person immune or becoming so. 5. That the virulence of the bacillus diphtheriæ seems to be correlated with its microscopic form. 6. That the so-called xerosis, pseudo-diphtheria, or Hoffman's bacillus are morphological varieties of the bacillus diphtheriæ, sometimes capable of producing clinical diphtheria, but usually *non*-pathogenic for guinea-pigs. 7. That we do not know whether the solid staining types regain their virulence when once they have lost it, though this seems probable. 8. That *Neisser's stain* is of no value in differentiating the barred or solid types of bacillus diphtheriæ.

114. **Malta Fever.**—Curry reports four cases of Malta fever occurring in soldiers or sailors returning from tropical stations and calls attention to the value of the serum test in this condition. He concludes that Malta fever is a very widespread disease in tropical and subtropical communities. He suggests that the sedimentation test with micrococcus melitensis be added to the list of common routine blood examinations, especially in cases of persistent recurring rheumatism. It is possible that many of the fevers occurring in the South that are not typical malarial or typhoid, may be Malta fever.

121.—See abstract in The Journal of July 13, p. 135.

125. **Tubal and Ovarian Disease.**—Rothrock has been led from his own experience to believe that the radical operative treatment for removal of affected tubes is in most instances unnecessary if the infection is observed early and properly treated. A large number of the patients suffering from infection in these organs are highly neurotic and the reflex pain and hyperasthesia are all out of proportion to the local lesion, the removal of which does not cure the patient. He has, therefore, for some years followed the treatment published by him in the *Northwestern Lancet*, in January, 1900, consisting essentially in local treatment to the uterine cavity and daily observations of the same after-disinfection with corrosive sublimate, 1 to 5000 or of potassium permanganate 1 to 1000, following which an application of ichthyol, 50 per cent. in glycerin, formalin 25 per cent., of Grammatikati's mixture (alumnol gm. 2.5, tinc. iodin 25 c.c., alcohol 90 per cent. 25 c.c.). In case the infection is confined to the cervix that portion of the cavity alone receives attention. Dilatation of the os is done, if neces-

requires its removal, a wide resection should be undertaken as rapidly as possible, and the ends brought outside the abdomen; continuity should be restored at a subsequent operation. 5. In exceptional cases of enteric intussusception resection and immediate restoration of continuity gives the only chance."

Essential or Toxemic Dropsy; Dropsy Without Albuminuria. W. P. Herringham.—The cases of general anasarca occasionally met with, chiefly in children, but sometimes also in adults, which resemble Bright's disease but without albumin in the urine, are discussed by Herringham, who describes the condition, lack of constant lesions, apparently normal kidneys, etc., and asks whether it is a real nephritis. He says that both in the symptoms and in the etiology from exposure to cold and after scarlatina it closely resembles nephritis. There are also many cases of scarlatinal nephritis without albumin in which the kidneys show atypical lesions. There are, it is true, some cases of edema from anemia and occasionally cases of pernicious anemia will terminate with great general dropsy. Bristowe, Ashby and Wright apparently take the view that dropsy is dependent upon anemia, but in some cases anemia is not present, and in others it is by no means of that degree that should naturally account for the severe anasarca. It is not to be supposed that a grown-up man in full work and after getting wet through suddenly falls a prey to anemia such as to produce anasarca as sometimes happens in the adult cases of this condition. He holds rather to the view that the condition here is of microbic infection which may in some cases produce anasarca and nephritis and in other cases cause a form without disease of the kidneys. It is the toxic condition of the blood which is the common cause of both these conditions and nephritis.

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Discussion on the Early Diagnosis of the Acute Specific Fevers. F. Foord Caiger.—The symptoms and differential diagnosis of measles, scarlatina and roseola are noted by Caiger, who points out the conditions that may resemble these and the difficulties attending the bacteriologic test of diphtheria. He believes the Neisser stain is the most trustworthy criterion for the true bacilli diphtheriæ that we have, excepting, of course, the inoculation test. The question of the "fourth disease" that has been suggested as existing by Dr. Clement Dukes, he holds as still *sub judice*, but says it offers a legitimate field for discussion and investigation.

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Radical Cure of Inguinal Hernia in Children. Harold J. Stiles.—The operation preferred by Stiles in case of inguinal hernia in children is practically the Mitchell Banks operation. While he has no doubt of the value of Bassini's operation in adults, in children he advises as little interference as possible with the anterior wall of the canal. He speaks with commendation of the advantages of the Cleveland needle over the MacEwan needle in passing the sutures.

Two Cases of Chronic Hydrocephalus in Infants Treated by Tapping and by Introduction of Aseptic Air in the Place of the Fluid. Wm. Ewart and W. Lee Dickinson.—The provisional conclusions which the authors consider warranted from their observations here reported are: "1. With due precautions the fluid of chronic hydrocephalus may be completely evacuated from the yet unclosed skull of infants, and aseptic air may be allowed to take its place. This operation may be repeated without detriment and with scarcely more risk than belongs to the usual method of paracentesis. 2. In favorable cases of moderate effusion a single operation may suffice. Continued oozing from the puncture for a few days after the removal of the tubes is not unfavorable. 3. In cases of considerable effusion an obvious indication is to relieve the brain from the weight and from the pressure of the fluid. The evacuation is facilitated by the introduction of aseptic air. By a timely repetition of the operation a hydrocephalic infant might be enabled to carry the weight of the head, and, if the treatment were begun sufficiently early, permanent damage to the brain tissue might be averted and a normal development might perhaps ensue. 4. In large heads, whilst hydropneumocephalus persists a considerable splashing sound is readily obtained. There is obvious risk in eliciting this sound by forcible succussion and for the same reason any abrupt movement of the head should be avoided."

Diagnosis of Suppurative Pericarditis in Children. Frederick E. Batten.—While the diagnosis of suppurative pericarditis in children is a matter of considerable difficulty and the cases are commonly mistaken for tuberculosis and empyema, the special points are given by Batten as follows: "One may say that a fairly definite date can be fixed for the onset of the disease, the condition of the child generally bears a striking resemblance to that of a child suffering from empyema; the child is pale but not sallow, the limbs are wasted and the muscles flabby, and the skin is generally moist, and has not the dry and scaly conditions so often seen in tuberculosis. The children are extremely liable to severe and sudden attacks of syncope. The temperature has a generally irregular character, with rather sudden rises and sharp falls. The rapidity of the heart's beat is always great, and seemingly out of all proportion to the general condition of the child, who does not seem especially distressed. On physical examination of the chest the signs suggest either an effusion into the pleural cavity or tuberculous consolidation of the lung, but, as a rule, no increase of the area of cardiac dulness can be mapped out, although epigastric pulsation may be present. It might be suggested that the diagnosis might be assisted by the introduction of an exploring needle, but given symptoms or signs that would suggest pericardial effusion it would be much safer to make an incision in an intercostal interspace or resect a rib if necessary rather than pass an exploring needle toward the heart." Until diagnosis becomes more accurate, rational treatment, viz., the opening of the pericardium and draining the cavity is impossible. Even where it is possible the percentage of recoveries would be slight.

Observations on Suppurative Pericarditis in Children. George F. Still.—This author, discussing the same subject, believes that we can do something in the way of prophylaxis and in the majority of cases we have a pneumococcal exudation in the pleural cavity producing secondary infection, and early diagnosis with speedy evacuation of this infective matter may reduce the risk of pericardial infection.

sary, by sea-tangle tents. It is important that it should be patulous to secure drainage. When the tubes are involved the treatment is modified somewhat. The patient in the acute stage is treated with rest in bed and cold applications. Later local treatment directed to the tubes as well as the uterine cavity is advised.

126. **Cholecysto-Colostomy.**—The question implied in the title of this article is answered by Shimonek as follows: 1. That in all cases of malignant obstruction of the bile-ducts, the safest, easiest and quickest operation is advisable. The diversion of the bile into the colon alone can not cause enough physiologic distress in the time such a patient will live to be at all objectionable and its beneficial effects in relieving the jaundice and its toxic effects will materially lighten the sufferings of the individual. 2. He would advise anastomosis in all cases where the gall-bladder or duodenum or both are so adherent that approximation would be difficult, requiring extensive dissection often involving profuse hemorrhage. 3. He would make the union with the smallest button and as far away from the flexure of the colon as possible, and to avoid any possible forcing of bile contents into the gall-bladder, thus bringing on a possibly dangerous infection. 4. That the rationality of diverting the bile into the colon is so far sustained in all the operations reported.

130. **Uric Acid Fallacy.**—The theories of uric acid and its pathologic action in the system are reviewed by Billings, who quotes from Croftan as to its non-toxicity and that the alloxuric bases are the real cause of the toxic affections usually attributed to uric acid. Although we find no positive knowledge in regard to this subject, we are better able at present to throw aside a lot of theories and absurdities that have been too much enforced in the past and are still largely advocated by certain authorities.

133. This article has appeared elsewhere. See The Journal of September 14, title 58, p. 717.

140. **Congenital Dislocation of the Hip.**—The opinions of various authorities are first noticed by Bradford who finds from experience that a small number of cases of unilateral congenital dislocation of the hip may be permanently cured by the bloodless method with the exercise of ordinary skill, but that not more than one-half can be cured by even exceptional skill; that the percentage of skill is less in bilateral cases, but that some improvement in the gait can be expected in all. He also shows that by operative reduction with incision three-fourths of the unilateral cases can be cured between the ages of 3 and 8 years, and one-half of the bilateral ones, if treated with best skill. That in children of these ages stiffening is not to be expected unless suppuration follows; this complication can be avoided with care. The question whether the acetabulum should be deepened in order to prevent reluxation is noticed and in certain cases he has employed this method.

163. **Gallstones.**—Vaughan describes the different types of gallstones and their method of occurrence. He sums up in the following statement: "1. Chlosterin and a compound of bile-pigment and lime, generally designated as bilirubin chalk, either singly or together, make up the essential part of gallstones. 2. The cholesterin, which forms gallstones, is not that brought to the gall-bladder from the liver as a constituent of the bile, but has its origin in the mucous membrane of the bladder. 3. While both bilirubin and salts of lime are normal constituents of the bile, the chemical compound formed by the union of these substances and which enters so largely into the composition of gallstones, is not formed by the condensation of bile, but is formed, so far as we now know, only as the result of bacterial infection of the bile. 4. Gallstones are formed in the bladder or gall-ducts only when the mucous membrane of these organs is infected. 5. The infecting bacterium which leads to the formation of gallstones is in the majority of instances the bacterium coli commune, but it is probable that other micro-organisms may have a like effect."

164. **Gallstones.**—The diagnosis of gallstones and their clinical history is discussed by Metcalf who concludes that, though many signs and symptoms are usually present, the only positive sign is the discovery of the stone in the feces. When symptoms of disease affecting the bile passages are persistent, exploratory incision should be made to complete the diagnosis and at the same time to give relief.

172.—This article has appeared elsewhere. See The Journal of September 14, 189, p. 723.

177-178. **Mosquitoes in Their Relation to Disease.**—Beyer's article is a very thorough description of the characteristics of the pathogenic mosquitoes, with illustrations. Veazie describes the species found near New Orleans. He makes the interesting practical note that the mosquitoes are very fond of sucking amongst soiled clothing, the culex especially, and he thinks this fact may account for the dissemination of disease by fomites. He has also seen them imbibing the vomited and excreted matter from patients. In this case the male will suck up the blood as well as the female and he suggests that Drs. Reed, Carroll and Agramonte will be interested in this observation.

FOREIGN.

British Medical Journal, September 7.

What Is Intussusception? How Should It Be Dealt With? Edmund Owen.—Owen is of the opinion that intussusception is surgical from the very beginning and the medical treatment can afford no trustworthy means of managing the cases, that prompt abdominal section is the only scientific and practical way of giving relief. In conclusion, he maintains, "that whether a strangulation of the intestine is by an ensheathing piece of bowel or by the neck of a hernial sac, the effects are very much the same, and that delay in affording relief is likely to be fatal. Lastly, that the best way of affording prompt and certain relief is by the surgeon cutting down to the seat of strangulation and putting it right in a proper surgical way."

Discussion on the Treatment of Intussusception in Children. Bernard Pitts.—This author thinks inflation may be employed sometimes when the intussusception is along the transverse or descending colon, as a useful preliminary operation and will often limit the field of operation and enable the incision to be made directly through the swelling. Even if complete reduction should apparently take place it is generally best to make sure of this by a small incision, otherwise one must remain in doubt, as it is very probable that reduction is not quite complete and that it will recur or else give rise later to a condition of chronic stenosis. He remarks that it is essential in young children that the shock should be minimized by placing the child on a hot-water cushion and by having the extremities covered with cotton wool and bandage. The operation must be a rapid one. When the abdomen is much distended and the position of the tumor has not manifested itself it is best to make an incision in the middle line and take special precautions against prolapse of the small bowel. A distended coil may with advantage be withdrawn and air and intestinal contents allowed to escape through a small incision, this being afterwards closed; examination is thus rendered comparatively easy. This is much better than allowing the coils of distended and unmanageable gut to remain outside the abdomen during exploration. He dwells especially also on the importance of suturing the exploratory wound and the use of the buried suture and leaving superficial sutures as long as possible. While deep buried sutures add a little to the length of operation, they are better in young children, and he adds the following modifications of the conclusions offered by him in 1897: "1. Try inflation only when the case is seen within a few hours of onset, and is not of a very acute character. In the great majority of hospital cases it is better to open the abdomen at once. 2. Inflation may be tried in certain other cases for the purpose of reducing the main portion of the intussusception and enabling the incision to be made directly over the cecum. 3. When reduction is found impossible in chronic cases a resection may be generally done through an incision in the ensheathing bowel. 4. In acute cases, and especially if gangrene is present or the condition of the bowel requires its removal, a wide resection should be undertaken as rapidly as possible, and the ends brought outside the abdomen; continuity should be restored at a subsequent operation. 5. In exceptional cases of enteric intussusception resection and immediate restoration of continuity gives the only chance."

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The Value of Widal's Serum Reaction in the Diagnosis of Typhoid Fever in Children. J. H. Thursfield.—The author has employed the Widal reaction in 100 different cases, in 42 of which it was positive; the remainder were negative, including examples of almost every febrile disease to which children are liable. In the 42 cases with the positive reaction, several were those in which the diagnosis would have been difficult without the test at the stage when it was made. Only one of these 42 gave a negative result later than the first week of illness. Allowing for the smallness of the figures he would claim that in children this positive Widal reaction is trustworthy evidence of the presence of typhoid and that negative reaction later than the tenth day of illness is strong but not absolute proof of its absence, while repeated negative reactions are trustworthy evidence that the case is not typhoid at all. The test is just as reliable in children as in adults.

Radical Cure of Inguinal Hernia in Children. Harold J. Stiles.—The operation preferred by Stiles in case of inguinal hernia in children is practically the Mitchell Banks operation. While he has no doubt of the value of Bassini's operation in adults, in children he advises as little interference as possible with the anterior wall of the canal. He speaks with commendation of the advantages of the Cleveland needle over the MacEwan needle in passing the sutures.

Two Cases of Chronic Hydrocephalus in Infants Treated by Tapping and by Introduction of Aseptic Air in the Place of the Fluid. Wm. Ewart and W. Lee Dickinson.—The provisional conclusions which the authors consider warranted from their observations here reported are: "1. With due precautions the fluid of chronic hydrocephalus may be completely evacuated from the yet unclosed skull of infants, and aseptic air may be allowed to take its place. This operation may be repeated without detriment and with scarcely more risk than belongs to the usual method of paracentesis. 2. In favorable cases of moderate effusion a single operation may suffice. Continued oozing from the puncture for a few days after the removal of the tubes is not unfavorable. 3. In cases of considerable effusion an obvious indication is to relieve the brain from the weight and from the pressure of the fluid. The evacuation is facilitated by the introduction of aseptic air. By a timely repetition of the operation a hydrocephalic infant might be enabled to carry the weight of the head, and, if the treatment were begun sufficiently early, permanent damage to the brain tissue might be averted and a normal development might perhaps ensue. 4. In large heads, whilst hydropneumocephalus persists a considerable splashing sound is readily obtained. There is obvious risk in eliciting this sound by forcible succussion and for the same reason any abrupt movement of the head should be avoided."

Diagnosis of Suppurative Pericarditis in Children. Frederick E. Batten.—While the diagnosis of suppurative pericarditis in children is a matter of considerable difficulty and the cases are commonly mistaken for tuberculosis and empyema, the special points are given by Batten as follows: "One may say that a fairly definite date can be fixed for the onset of the disease, the condition of the child generally bears a striking resemblance to that of a child suffering from empyema; the child is pale but not sallow, the limbs are wasted and the muscles flabby, and the skin is generally moist, and has not the dry and scaly conditions so often seen in tuberculosis. The children are extremely liable to severe and sudden attacks of syncope. The temperature has a generally irregular character, with rather sudden rises and sharp falls. The rapidity of the heart's beat is always great, and seemingly out of all proportion to the general condition of the child, who does not seem especially distressed. On physical examination of the chest the signs suggest either an effusion into the pleural cavity or tuberculous consolidation of the lung, but, as a rule, no increase of the area of cardiac dulness can be mapped out, although epigastric pulsation may be present. It might be suggested that the diagnosis might be assisted by the introduction of an exploring needle, but given symptoms or signs that would suggest pericardial effusion it would be much safer to make an incision in an intercostal interspace or resect a rib if necessary rather than pass an exploring needle toward the heart." Until diagnosis becomes more accurate, rational treatment, viz., the opening of the pericardium and draining the cavity is impossible. Even where it is possible the percentage of recoveries would be slight.

Observations on Suppurative Pericarditis in Children. George F. Still.—This author, discussing the same subject, believes that we can do something in the way of prophylaxis and in the majority of cases we have a pneumococcal exudation in the pleural cavity producing secondary infection, and early diagnosis with speedy evacuation of this infective matter may reduce the risk of pericardial infection.

The Lancet, August 31.

Recent Inquiries and Researches into the Poisonous Properties of Naphthalene and Aromatic Compounds. R. P. White and John Hay.—The poisonous properties of naphthalene and benzene compounds have been investigated by Hay and White, who find that probably the naphthalene group is much less dangerous than the benzene and toluene groups. Of the naphthalene compounds it is probable that the dinitrobenzene naphthalene is more poisonous than the mono-nitro preparation. The mono-nitro-benzene does not seem poisonous to cats, which appear to thrive upon it, but dinitro-benzene is exceedingly poisonous to both man and animals. The smallest lethal dose of dinitro-benzene for a cat of six pounds is 0.08 gram, given by the mouth in one dose; probably less than 1.82 gram would be fatal to man. Mono-nitro-toluene is quite inert when administered to cats, but nitro-toluene is too dangerous to work with, while the trinitro compound of toluene appears less dangerous than its dinitro-benzene equivalent. All these facts imply the administration either by the mouth or hypodermically, but the question has arisen whether dinitrobenzene or some of these other compounds can be absorbed through the skin in dangerous quantities. In manufactories where men work in these materials it has been suspected that they are dangerous by inhalation, and a German manufacturer who supplied fresh air entirely to his workmen so that they inhaled no vapor from the substances had, nevertheless, a certain amount of sickness amongst the employes and the only way in which the poison could get to the blood was through the skin. Hay has experimented on cats, shaving off the fur and insuring that there were no abrasions or cuts and applying dinitro-benzene ointment, carefully covering it with collodion. In three experiments the cats died within two or three days, or within a week. He also applied a small portion of a 25 per cent. dinitro-benzene ointment on his own skin and it produced decidedly uncomfortable symptoms lasting for over 48 hours, headache, tremor, high pulse, lividity of lips and nails, a feeling of fulness in the head, metallic taste, etc. The experiments prove conclusively that with dinitro-benzene within close contact with the skin it becomes absorbed. He points out the dangers of handling, grinding, heating and otherwise manipulating this material. Pure dinitro-benzene consists of colorless crystals, but the commercial substance is often darkened in color from impurities. In the working of these substances the workmen should avoid anything in the way of greasy appliances, unnecessary exposure of the skin, the hair of the head should be cut close and the face have as little hair as possible and caps close fitting, covering as much surface as possible. There is also a suggestion that the numerous oxidizing ingredients associated with dinitro-benzene in the manufacture of high explosives may also have some influence on absorption.

On the Prophylaxis of Carcinoma. C. B. Keetley.—Almost all primary carcinomas are situated in the breast, alimentary canal, skin, uterus or in the canals, ducts and glands subsidiary to these parts or directly opening into them. The medium which can carry cancer is, therefore, one which is liable to reach such situations, and Keetley has sought for this in water, which he thinks, however, is not likely to be a carrier. He considers milk much more dangerous in this respect, especially in producing cancer in the alimentary tract. He suggests also that flannel underwear may have something to do with the occurrence of mammary cancer, as it is handled more gently in the laundry than other fabrics and the germs are less likely to be destroyed. He asks for information as regards the possibility of guilt or innocence of butter, milk and cheese in the etiology of carcinoma and suggests the following rules for the prophylaxis of cancer: "1. Chronic inflammation, suppurations and especially ulcerations, should not be neglected or allowed to drift. Still better, commencing troubles of the kind should be treated promptly and not allowed to become chronic. With regard to ulcerations, especially of the alimentary canal, and with regard, also, to suppurations, especially of the breast, it is to be remembered that the cicatrices left by their cure are liable to become the seat of malignant infection. It is, therefore, doubly desirable to cure such ulcerations and suppurations in their earliest stage, so that little or no cicatricial tissue may remain, and in cases where the arguments for and against the removal, as opposed to the simple healing of an ulcer, are otherwise evenly balanced, the indication to remove a place especially liable to cancer should prompt one to excision. 2. Well-known sources of irritation of mucous membranes and of skin should be avoided, *e. g.*, smoking when any trace of soreness is discovered in the mouth, on the tongue, or on the lips, and the habitual use of strong condiments and spices. Workers in special trades, such as chimney-sweeping, should lose no time in having the smallest cutaneous rashes or other trouble promptly cured. Among milk-products cheese is itself an irritant to mucous membranes. Some syphilitics with a tendency to ulceration of the tongue, notice that a fresh attack frequently follows eating cheese. 3. A woman should allow nothing to come in contact with her nipples except smooth clean linen, cotton or silk, and the soap and warm water with which she washes herself. After being washed the nipples should be gently and thoroughly dried. She should not touch them with her hands or fingers at all. During lactation the nipple should be cleansed and gently dried after each act of sucking and then protected with a dry and clean covering. The nipple should be not merely withdrawn from the infant's mouth and pushed back under the mother's clothes. If wool be worn it should be sterilized by heat. 4. Whoever takes as food uncooked and unsterilized milk, butter and cheese should recognize that he does so at the risk of introducing into his system the germs of disease, and that among these disease essences, so to call them, may be that of carcinoma."

On the Behavior of Oxy-Hemoglobin, Carbonic-Oxid-Hemoglobin, Methemoglobin, and Certain of Their Derivatives, in the Magnetic Field. Arthur Gamgree.—The diamagnetism of blood was first observed by Faraday in 1845, and has since been remarked upon by other investigators. Gamgree has investigated the reaction to magnetism of oxyhemoglobin and comes to the following conclusions from his experiments: "1. The blood-coloring matter, oxy-hemoglobin, as well as carbonic-oxid hemoglobin and methemoglobin, are decidedly diamagnetic bodies. 2. The iron-containing derivatives hematin and acethemin are powerfully magnetic bodies. The differences in magnetic behavior between the blood-coloring matter and acethemin and hematin point to the profound transformation which occurs in the hemoglobin molecule when it is decomposed in the presence of oxygen. 3. The preliminary study of the electrolysis of oxy-hemoglobin and CO-hemoglobin renders it probable that in the blood-coloring matter the iron-containing group, on which its physiologic properties depend, is (or is contained in) an electro-negative radical; according to analogy the iron in such a compound would possess diamagnetic and not magnetic properties."

Indian Medical Gazette, August.

A Suggestion for the Surgical Treatment of Chyluria and Other Forms of Filarial Lymphatic Varix. Patrick Manson.—The following suggestion, which was offered by Manson in a case of persistent chyluria, is here given by him to the public. The disease was evidently slowly killing the patient and had resisted all treatment. As not infrequently happens the patient had varicose groin glands. It occurred to him that tension in the lymphatic varix, the rupture of which into the urinary tract was the source of the chyluria, might be relieved and the rupture healed, could the varix by surgical means be induced to empty into a vein. He therefore suggested to the patient to have one of the dilated lymphatics dissected out under asepsis, cut across, and telescoped into some neighboring and convenient vein which would have to be slit up for a short distance for this purpose. In this way he thought that by short circuiting the path of the regurgitating chyle the chyluria might be cured and the patient's life saved. He offers this suggestion to Indian surgeons who have better opportunities for following it up than he has in Great Britain.

Relation of the Entero-Coccus to the Etiology of Tropical Dysentery. E. D. W. Greig.—The entero-coccus described by Thiercelin in 1899 as found in normal stools in which it appears to lead a saprophytic existence, is here described. Two observers have recently been working on the relation of this organism to the etiology of non-tropical dysentery. Simonin found its presence in a large number of cases occurring in Paris, and Lewkowiez describes the microbe and considers it possibly the organism of some cases of non-tropical, and even of tropical dysentery. He investigated several cases and in two of them he got the entero-coccus in the stools in great abundance, and in the third, which was complicated with meningitis, he obtained the organism in pure culture by lumbar puncture. He considers it related to the pneumococcus and found it in the stools partly enclosed by phagocytes in the form of diplococci or short chains of four to eight. In the latter the cocci are arranged in pairs and the opposing surfaces are broad and close to one another. On agar they grow as single cocci, sometimes as pairs. A certain amount of point at the free ends resembling the pneumococci is sometimes seen; most possess a broad delicate capsule. In broth they grow out in long chains; the capsule is well developed, and encloses single cocci, pairs of cocci, or certain sections of the chains. In the animal organism the entero-coccus occurs as a diplococcus with well-marked capsule, and sometimes it takes the form of streptococcus. It stains by Gram's method. It differs from the pneumococcus in its more rounded form and breadth, and forms longer chains in the broth. On artificial media it resembles the pneumococcus, the colonies are longer and more slimy, very transparent and tend to run together. In milk, after a time, coagulation takes place. It is pathogenic to mice and rabbits, producing local inflammatory lesions with slight toxic or septic action, agreeing well with the clinical picture of dysentery. In Greig's preliminary observations, he reports finding in tropical cases organisms that seem to him identical with those of Lewkowiez, associated with other bacilli, however, and he considers the constant occurrence of this organism in acute dysentery and in the production of phagocytes, lends support to the proposition that it is causally connected with the acute dysentery of the tropics. In simple diarrhea, personal examinations with a view to determining the presence of this organism were negative. He thinks it quite likely that it may exist as a saprophyte under normal conditions, but from any cause that lowers the local resistance or increases its virulence, a pathologic condition of dysentery is produced.

Presse Medicale (Paris), August 24 and 31.

Surgical Treatment of Hydatid Cysts in the Kidney. E. Albarran.—Of the seven patients treated by trans-peritoneal nephrectomy which Albarran has collected only two survived. On the other hand, all the three patients treated by nephrectomy by the lumbar route, have recovered. Consequently, nephrectomy by the latter route does not deserve the discredit into which nephrectomy in general has fallen. Albarran describes his personal case in detail, and summarizes the indications as follows: If a laparotomy has been done on a dubious diagnosis, conclude with nephrostomy unless under exceptional circumstances. Houzel's fourteen and Albarran's twenty-three patients all recovered. If the intervention is by the lumbar route, with or without an established diagnosis, open the cyst, evacuate, and determine the possibility of exterminating the germinative membrane in order to proceed to capitonnage. If this is impossible, examine the kidney, and if it is still useful and it is possible to extirpate the cyst in toto, proceed to a resection of the kidney. If the organ is still useful and the above operations are impossible, continue with nephrostomy after partial resection of the cyst. But if the kidney is so damaged that it is totally incapable of future functional activity, try to detach it and, if possible, conclude with nephrectomy. If the adhesions are too solid and numerous for this without too much destruction of tissue, and especially if the patient is not in a condition to bear such an extensive operative traumatism, restrict the intervention to nephrostomy.

Cacodylic Medication. A. Martinet.—Both experimental and clinical research and experience confirm the general stimulation of the organism and of its functions that follows administration of arsenic. Experience has also demonstrated the correctness of Gautier's assertions in respect to the remarkable non-toxicity of one of its derivatives, cacodylic acid. As long ago as 1841, Bunsen announced that a large amount of this acid could be injected into a rabbit's ear without intoxication, and he consequently classed it as a non-poisonous substance. Only two cases of disturbance following its administration have been reported, one was in a patient with cancer of the liver, and consequently, hepatic insufficiency for the present must be accepted as a contra-indication. The other was a tuberculous patient who took 20 cg. of sodium cacodylate by the mouth during the day in three pills. Symptoms of arsenical poisoning were evident after the eleventh pill. Normal conditions were restored after suspension for three days. (*Brit. Med. Jour.*, 1900, ii, p. 1823.) The chemical and biologic properties of arsenic are so altered in cacodylic acid that it is impossible to detect it by the usual reagents for arsenic. Impurities must be guarded against. The absence of poisonous arsenites and arseniates in sodium cacodylate is indicated by the lack of precipitation when an excess of lime water mixed with baryta water is added. The most important test for the presence of arsenites and arseniates is the addition of hydrochloric acid to an aqueous solution. There should be no yellow precipitate from the formation of arsenic sulphide by the action of hydrosulphuric acid. These impurities may have been the cause of the intoxication mentioned above. It is prudent to commence with small doses—2.5 to 5 cg. of sodium cacodylate—and gradually increase to 10 cg., which is a good average dose. There does not seem to be any particular advantage from using larger doses. The subcutaneous method is preferable. Administration by the mouth or rectum should be reserved for cases in which the former is impossible owing to the distance from the physician, or the timidity of the patient. Gautier absolutely rejects any but the subcutaneous route, but this is a little too sweeping. Comparative case-reports show that the best results have been attained by suspending the medication for a week between each series of eight to twelve injections, without waiting for symptoms of intolerance. A good prescription for subcutaneous injection is Gautier's: 6.4 gm. of pure sodium cacodylate, and ten drops of a 10 per cent. alcoholic solution of carbolic acid, in 100 c.c. of distilled water. When necessary to administer it by the mouth, Martinet prescribes 50 cg. of sodium cacodylate in 100 gm. distilled water. A teaspoonful contains 2.5 cg. of sodium cacodylate. One or two teaspoonfuls should be taken in the middle of the two principal meals in a glass of some beverage. It can be made into a pill by the following formula: sodium cacodylate 2 cg.; benzoin and licorice powder each 1 cg., and one drop of 90 per cent. alcohol. For rectal injection, one or two teaspoonfuls of an aqueous .5 to 1 per cent. solution of the sodium cacodylate. This is equivalent to 2.5 to 5 cg. of the active substance. One or two tablespoonfuls of boiled water are added, and, if needed, two or three drops of laudanum. The onion odor of the breath is particularly frequent in children, and often in those who are deriving great benefit from the medication. Gautier considers it an indication of the formation of cacodyl oxid and other toxic substances, but clinical experience does not sustain this view. The onion odor was not mentioned in the case of intoxication mentioned above. (See The Journal of August 24, p. 539.) Rocaz lauds this cacodylic medication especially for children. He prescribes 1 cg. a day at 3 years of age, 2 at 6, 3 at 9; 4 at 12, etc. Martinet has found doses of 3 to 10 cg. very beneficial for children between 6 and 12, with no indications of intolerance, except the onion odor. Josias is accustomed to give the children in his service as much as 10 to 15 cg. a day.

Berliner Klin. Wochenschrift, August 19.

Association of Tetany and Epilepsy. A. Westphal.—A woman of 42 with chronic epileptic idiocy exhibited a permanent tonic contracture of the muscles. Another patient exhibited symptoms of tetany the second day after a partial strumectomy. It was followed by cachexia strumipriva and double cataract. Six months after the operation, epileptic seizures appeared, preceded and outlasted by typical tetanic convulsions. The seizure was a mixture of tetany and epilepsy. There were no further attacks after six days of thyroiodin treatment until dismissal, six months later. On suspension of the thyroiodin, however, the seizures recurred, requiring the continuance of the treatment, which had cured the apathy and other psychic disturbances at the same time as the other troubles. Both the tetany and the cataract formation are probably nutritional disorders, due to the action of toxins, similar to the trophic disturbances observed in certain nervous affections. The toxins probably originate in the products of morbid metabolism.

Centralblatt f. Bakteriologie (Jena), July 12 and 18.

The Autosterilization of the Intestines. J. H. F. KOHLBRUGGE.—Many scientists have noticed that in animals the small intestine is sterile, but Kohlbrugge is the first to explain this phenomenon as due to a process of autosterilization. The intestinal secretions are bactericidal, he states, and all bacteria coming in contact with the secreting wall are destroyed under normal conditions. The benefits derived from saline purgatives, etc., are probably due to the augmented secretion which they induce. The bactericidal properties of the intestinal juices are, of course, derived from the blood. Experiments on isolated loops of the intestines showed that the bacteria increased enormously in numbers if the circulation was arrested, while they were rapidly destroyed if the circulation was maintained. Readers of THE JOURNAL are familiar with Kohlbrugge's assertions that every intestine has its individual colon bacillus. and that the appendix may be the nesting-ground for these specific bacilli. The colon bacilli taken in the food are probably killed in the stomach, the same as the home-grown colon bacilli, if they happen to find their way into the stomach. Rabbits eat their feces and they become sterilized in the stomach. With sterile food and sterilization of the mouth, all the wild, imported bacteria may be killed, but one's own colon bacilli are not influenced, and sterile feces should not be expected. In health, the intestinal putrefactions depend exclusively upon one's own bacilli of putrefaction in the large intestine. The bactericidal power of any substance ingested should not be calculated on the basis of the bacteria in the stools, as the numbers vary widely even in health, and a few millions more or less are of little consequence. The ordinary microbes in the feces are harmless and the clinical importance of putrefaction in the intestines has been exaggerated. It is also to be borne in mind that intestinal disinfectants do not affect the products of the metabolism of the bacteria. Purgatives and a milk diet are the only sure means of diminishing putrefactive processes. When the intestinal wall is an actively secreting membrane, it is impermeable for bacteria, but all processes which interfere with its secreting power are liable to render it permeable for micro-organisms, both wild and home-grown. Bacteria pass more readily from without into the intestine than from within outward. Injected under the skin or into the blood, they may soon be detected in the intestines. The walls of the latter seem to be powerless against them, possibly because the vital functions in general have already become depressed by infection from them. The chemical, fermenting action of the home-grown bacilli in the intestines might possibly be dispensed with, but they evidently are useful in stimulating peristalsis and in checking the development of other more harmful bacteria by their acid reaction. Their gaseous products may also influence the statics of the intestines and, indirectly, the movements of the diaphragm. The antagonism between the home-grown and the wild bacteria is probably their most important function. The small intestine has no home-grown bacteria or, if any, they are of the colon bacillus group. The cecum is the shelter of the typical, individual, colon bacillus and the rectum, of the putrefaction bacteria, like the putrificus, proteus and subtilis and also the acidophilus group, which are probably akin to diphtheria bacilli. The individual colon bacilli are only to be found elsewhere in the lower portion of the ileum. Those found in the jejunum are a branch variety and those in the colon are modified by contact with the putrefaction germs. The pancreatic juice and the bile have little if any bactericidal power. The autosterilization of the intestines occurs only *in vivo* and can not be studied on the isolated secretions. This communication is based on extensive personal research and study of the works of others, who have discovered many of the facts but have failed to interpret them from this point of view.

Centralblatt f. Gynekologie (Leipsic), July 27.

Treatment of Chronic Exudates in the Pelvis with Hot Air. O. POLANO.—This rapid and powerful stimulant of resorption has proved extremely effective in Polano's experience applied to the pelvis for the treatment of chronic exudates. In one of his numerous cases the patient was cured of a hard exudate, palpable from the ilium to the umbilicus, which vanished entirely in the course of twenty applications of the hot-air apparatus. He found it particularly valuable in promoting resorption after evacuation of a pus pocket. It always relieved the pain immediately. Advanced pregnancy in one of his patients was not affected by the hot-air treatment which was applied in this case to relieve edema of the labia.

August 10.

The Mercury-Air Colpeurynter and Colpeurynter Massage. L. PINCUS.—The long-sought means of effective ambulant treatment of various chronic gynecologic affections is obtained by means of the vaginal colpeurynter filled with mercury or air, which Pincus recommends after three years of thorough trial in both dispensary and private practice. It is the perfection of the weighting-down treatment which he has long advocated, as it allows the weighting-down to be done so gradually, and removed in the same way by fractions of a millimeter, while it is simple and inexpensive. In pelvic lesions located near the pelvic floor, this measure is the chief factor in treatment and compression of the abdomen by bandages the adjuvant, but in lesions above, the latter is the main factor and the vaginal weighting-down and massage the adjuvant. The apparatus consists of two balloon-shaped colpeurynters, connected by tubes with a central, graduated, glass ball-shaped vessel. Two other tubes are also attached to the glass vessel, one connecting with an air bulb and the other admitting filtered air. The four tubes—each with its stopcock—form an X, with the glass ball in the center. One of the colpeurynters is empty and one is filled with mercury. The empty one is inserted in the vagina, then, by raising the colpeurynter filled with mercury, the latter flows into the graduated glass vessel in the center, from which it is gradually allowed to flow into the colpeurynter in the vagina until it holds 1000 to 1500 gm. of mercury. In cases of parametritic exudates and in all processes with effusions located on or near the floor of the pelvis, chronic in character, this intravaginal treatment with the mercury colpeurynter is a most valuable measure. It must be supplemented by compression of the abdomen. In case of lesions near or above the pelvic inlet, intravaginal massage is the adjuvant to compression of the abdomen. For massage purposes, the vaginal colpeurynter is filled with air instead of mercury; the tube is closed with the stopcock, the rest of the apparatus removed, and the end of the tube is turned up and fastened to the patient's clothing above. She is then dismissed for two or three days. If the pressure is too great the wearer can release a little of the air by turning the stopcock. This treatment has proved exceptionally useful in case of vaginismus, as the empty colpeurynter can be introduced through the smallest aperture, and after it has accomplished the dilation of the vagina, local treatment of the underlying gonorrhea or other cause can be instituted without delay. It has also cured many inflammatory conditions of the pelvic muscles, numerous so-called neuralgic affections of the region, weakness of the muscles entailing chronic constipation, and hemorrhoids. It is a much more effective stimulant of labor pains than the water colpeurynter. Pincus has waited before publishing his experience until thoroughly convinced of the exceptional benefits to be derived from the mercury and the air colpeurynters and recommends them now with confidence. This preliminary communication is soon to be followed by the detailed report of his experiences in the *Sammlung Klinischer Vorträge.*

Berliner Klin. Wochenschrift, August 26.

Hydatid Cyst Simulating Acute Pleuropneumonia. P. K. Pel.—The clinical picture was that of acute pneumonia of the middle lobe of the right lung and extensive pleuritis without effusion, complicated by a pleural effusion on the left side. The only missing symptoms were the pneumonia-sputum and facial herpes. The protracted course was attributed to the general debility from a vagabond life and alcoholism. An operation confirmed by autopsy soon afterward, revealed a hydatid cyst in the upper lobe of the right lung and the remains of a similar cyst in the left, surrounded by inflamed lung tissue. The first cyst was isolated, but the other communicated with a bronchus, and the acute symptoms had probably been caused by infection by this route. The physical signs on the left side were thus explained by the empty cyst and the compressed and inflamed lung tissue; on the right, by the crowding of the lung tissue by the deep-seated cyst.

Treatment of Heart Disease by Compression. M. Mendelsohn.—The painful sensations in heart disease are frequently located in the thoracic wall rather than in the heart itself. The pressure of an abnormally movable, hypertrophied heart pounding against the wall is almost sure to be painful. Elastic compression of the heart—which Mendelsohn has been advocating for some time, abolishes all these painful sensations while it relieves and favors the functional activity of the organ.

Deutsche Med. Wochenschrift (Leipsic), August 22.

Accidents and Diabetes. F. Hirschfeld.—The direct influence of trauma on the origin of diabetes is unmistakable in many instances. They are usually cases of nervous diabetes and a direct action on the nervous system can be assumed, as in the traumatic glycosuria described by Claude Bernard. It is possible, also, that the development of diabetes in case of an existing affection of the pancreas may be traced to the trauma. It may likewise induce an affection of the pancreas, such as cysts or hemorrhage or possibly a chronic inflammation. An already existing diabetes may take an unfavorable turn in consequence of a trauma. Coma is the most important of the aggravations from this source. In severe cases of diabetes a very slight cause may suffice to induce coma—so slight that it is difficult to decide whether it may not have been the natural consequence of the disease. Occasionally the accident may induce coma even in a mild case of diabetes. Death in such a case can be unconditionally ascribed to the accident, as coma very rarely appears in mild cases. Death under these circumstances does not occur for ten days after the accident, while in the severe forms of diabetes it follows in one or two or, at latest, four days afterward. It is probable that an accident may transform a mild and insignificant vascular affection into conditions that favor gangrene in the cases in which it appears consecutive to trauma. Hirschfeld concludes by calling attention to the inadvisability of much muscular exertion in the case of diabetics in general. Their capacity for muscular exertion is much diminished as a rule, and they should select occupations which do not call for severe physical efforts.

Scrofulosis and Tuberculosis. H. Neumann.—Investigations of Berlin school children undertaken by Neumann and several specialists, showed that 89 per cent. were scrofulous. He considers that they are all tuberculous and that the tuberculosis is the primary affection, causing the scrofulous manifestations by its toxins.

August 29.

Abscesses in the Rectus Muscles in Typhoid Fever. L. Bollack.—In abscess-formation in typhoid fever, the bacilli always seem to have lost their virulence to a great extent. The abscesses usually appear during convalescence and are symmetrical. A degenerative process seems to occur constantly in the rectus muscles, probably a granular or waxy degeneration, which renders the tissues very fragile. During some effort to cough they are liable to rupture, with consequent hemorrhage, and, in rare cases, to suppurate, by the action of the typhoid bacillus alone. Pyogenic properties are probably acquired by the bacilli only as they become attenuated. The discovery of typhoid bacilli in an abscess or empyema is therefore an indication not to be hasty in operating. In a case described, an abscess in the rectus was evacuated and pure cultures of the typhoid bacillus derived. In the course of a week a symmetrical abscess formed which was not interfered with, and it was spontaneously resorbed in the course of a month.

Deutsche Zift. f. Nervenheilkunde, xix, 2 to 4.

Pathologic Changes Induced by Lumbar Puncture. V. P. Ossipow.—The withdrawal of the cerebrospinal fluid in dogs by lumbar puncture causes a persistent hyperemia in the vessels of the meninges and even of the brain and cord. Repetition of the puncture leads to the production of numerous punctated hemorrhages. When the urine is aspirated, the hemorrhages are still more pronounced. The nerve cells are likewise affected, not only by lesions of the cells from the hemorrhages, but by the altered relations between the circulation and the nutrition of the cell.

Muenchener Med. Wochenschrift, August 27.

Etiology of Erysipelas. Jordan.—Acute osteomyelitis is usually the result of staphylococcus infection, but it has been proved that it may be produced by streptococci, pneumococci and typhoid bacilli. In the same way, erysipelas may be the work of the staphylococcus aureus or possibly of the pneumococcus or colon bacillus, but in general, it is the result of infection with the streptococcus. It has been produced on rabbits' ears by all these various micro-organisms. The parallelism with acute osteomyelitis is rendered more striking by the fact that the latter is usually a suppurative, but may be occasionally a serous or hemorrhagic-septic inflammation, while erysipelas is usually a serous inflammation, but may be accompanied by suppuration and even by gangrene. Both affections vary in intensity and either may terminate in pyemia and sepsis induced by the same causal agent.

Neurologisches Centralblatt (Leipsic), August 16.

Regeneration of Spinal Cord. A. Fickler.—In 1899 Fickler published two cases of compression of the spinal cord from caries of the vertebræ, in which he found a number of delicate, well-constructed nerve fibers emerging above the point where the compression had been located, and returning into the cord below. As no such fibers occur normally at these points, and as one case had showed marked improvement in the symptoms after the affection had persisted a certain length of time, he accepted them as newly-formed fibers, evidences of a regenerative process on the part of the spinal cord. Bielschowsky has recently published a similar discovery in a case of compression of the spinal cord. The fibers emerged from the region of the anterior commissure, in the sheath of the pia just above, and returned into the spinal cord just below the compressed region. He considers them a split-off portion of the pyramidal tract. No improvement had been noticed in the symptoms in the case. He also asserts that the fibers observed by Fickler must have been of the same nature. The latter points out that such fibers have never been discovered except at the compressed point, and he claims Bielschowsky's case as a typical instance of the regeneration of the spinal cord. The circumstances were unusually favorable for such an occurrence, as the compressing exostosis did not seem to have increased in size during the latter portion of the time. The first symptoms had been noted two and one-half years before death. The conditions of cure, he states, are the possibility of the restoration of normal circulation of lymph and of the development of new myelin sheaths around the axis cylinders which have remained uninjured, although their sheaths may have degenerated, and thirdly, the regeneration of nerve fibers. The first factor alone may be sufficient in many cases, others may require the co-operation of another or of all.

Pflueger's Archiv (Bonn), August.

Physiology of the Suprarenals. H. Strehl.—The removal of one suprarenal from an animal does not cause disturbance, but ablation of both was inevitably fatal in the experiments on 114 animals described. All attempts to transplant a suprarenal met with failure. Severing or compressing the vein of the remaining suprarenal, after removal of the other, always entailed the same result as the extirpation of the organ—that is, the blood pressure invariably fell. After cessation of the compression the blood pressure rose again. No substance could be discovered in any other organ that has this power of increasing the blood pressure.

Therapie der Gegenwart (Berlin), August.

Subarachnoid Antitoxin Treatment of Tetanus. E. v. Leyden.—It has been established that tetanus antitoxin will neutralize the tetanus toxin in the blood, but the persistence of the convulsions, after this has occurred, indicates that they are due to the localization of the toxin on the large motor ganglion cells of the anterior horns. An emulsion of these cells from a patient who had died in spite of the subcutaneous injection of antitoxin, induced experimental tetanus while tests with the blood were negative. Injecting the antitoxin directly into the brain has saved only 6 out of the 24 thus treated to date, according to the records. Kocher has obtained slightly better results by slowly instilling it after trephining, introducing the canula for 4 or 5 cm. Jacob and Sicard first tried subarachnoid injection, or dural infusion as they call it, after finding it very successful in tests on dogs, although it always failed on goats. This method has been tried eleven times on man. Six patients could not be saved, but the last five—although very severe cases—have all recovered, including a new case described by Leyden in this communication. The patient was a young hostler with temperature of 105.8 F. Duration of incubation not known, but symptoms of tetanus for three days. The temperature dropped to 101 F. in an hour after 10 c.c. of cerebrospinal fluid had been withdrawn and 5 c.c. of Behring's tetanus antitoxin infused in its place. The improvement was marked the next day, but the day after, the muscular rigidity becoming more pronounced, the infusion was repeated under the same conditions. By the end of the month the patient was completely restored except for persisting rigidity of the abdominal muscles which gradually subsided. The amount of antitoxin injected was equivalent to .5 gm. of the solid form. In Leyden's first case, two years ago, a young woman with tetanus of ten days' incubation, after a three months' abortion, recovered after dural infusion of the equivalent of 2.5 gm. of the solid antitoxin. The technique is the same as for lumbar puncture, but the patient must be kept under the influence of narcotics, and the food must be supervised as the patients are liable to choke. [Pfaundler has recently reported three cases of tetanus neonatorum treated in this way at Escherich's clinic, in which the beneficial influence of the dural infusion of antitoxin was unmistakable. McCaw has also published a recovery from tetanus neonatorum, with temperature of over 106 F., after subcutaneous injection of 5 c.c. of antitetanus serum from the Institut Pasteur. Pure cultures of the tetanus bacillus were derived from the navel secretions. Half the amount was injected again the third day, six days after the first symptoms had appeared.—Ed.]

Test of the Permeability of the Nose. Glatzel.—A small metal mirror is held against the lip just below the nose and the patient breathes on it. The moisture from the breath spreads out on it like a butterfly's wings and gives an accurate picture of the amount of breath passing through the nose. In case of unilateral obstruction, the disproportion is striking between the two sides of the picture. A few concentric arcs are engraved on the mirror for convenience. It is cut to fit close against the lip and to be used on the four sides.

Wiener Klin. Rundschau, August 25.

Treatment of Vertigo. R. Spira.—A concussion is liable to separate the terminal fibrils of the neurons innervating the labyrinth, and thus induce disturbances in hearing and in equilibrium. With repetition of the external excitation the vestibular nerve becomes deadened and less sensitive and the clinical disturbances in equilibrium become proportionately less and less pronounced. Spira therefore advocates as a treatment for vertigo, the systematic repetition of the external estimulation. This can be accomplished by daily gymnastic exercises, swinging the head up and down, to and fro and from side to side, and turning in circles around a chair or table, proceeding very gradually. This will cure the tendency to symptoms suggesting seasickness which many persons experience when they ride backward, swing or waltz. It has proved particularly efficacious in cases of vertigo consecutive to concussion of the labyrinth.

September 1.

Fixation Abscess in Puerperal Septicemia. Jansen.—A febrile parametritis following a spontaneous birth resulted in two abscesses in the gluteal region on each side of the sacrum. Fever persisted after evacuation and the spleen and liver remained hypertrophied, although the parametritis was almost cured. The temperature was not affected by quinin. The pulse increased to 145 and the patient became delirious, with chills. Two grams of oil of turpentine were injected under the left deltoid muscle, producing a fixation abscess. As it developed, the symptoms vanished and the patient rapidly and completely recovered. The case is described more fully in the *Niederlandischen Med. Wochenschrift.*

Nasal Therapy of Neuroses. L. Kuert.—While holding a 9-year-old boy who was having convulsions in the course of severe whooping cough, Kuert tested the corneal reflex and noticed that the cramp in the larynx unmistakably moderated as the cornea was touched. The whoop diminished in intensity, and as the eyelid was pressed against the eyeball, it became less and less, and ceased entirely when the conjunctiva was gently rubbed with the finger. This discovery of the close connection between the throat organs and the terminals of the trigeminus nerve was confirmed by further tests. The spasm of the glottis was completely arrested by tickling the mucous membrane of the nose with a feather. Further tests and experiences with other patients completed the demonstration of the inhibiting influence on spasms of the glottis, larynx and neighboring muscles of mechanical irritation of the terminals of the trigeminus. He has utilized this discovery during the last ten years in the treatment of spasm of the larynx, pharynx, lids, yawning spells, facial spasms, spasmus nutans and even in the uncontrollable vomiting of pregnancy, with almost invariable success. In very few of these cases was the nasal membrane pathologically altered. Besides the simple measures above mentioned, rubbing the cornea with the finger, tickling or holding the nose, he has used a snuff of quinin and sugar, or a 1 or 3 per cent. mentholized salve. A more energetic measure is a snuff containing a little veratrum album and Venetian talc. He uses quinin or a very small amount of the first snuff in the case of infants. Two cases of spasmus nutans were thus cured, also a number of obstinate cases of blepharospasm in older children. He prefers for the latter a salve of 30 cg. of mercur. precip. flav. in 15 gm. of vaselin. A pledget of cotton impregnated with this salve is inserted in each nostril alternately. The result was like magic in several instances. In one case the little patient, a boy of 5, suffered also from enuresis nocturna which vanished with the blepharospasm. Two mild cases of facial spasm were cured with a mentholized salve, and several of tic convulsif with the snuff. Yawning spasms which had resisted months of other treatment, ceased completely after a few days of the snuff. Laryngeal spasms on a basis of hysteria promptly yielded to the snuff. A severe and obstinate case of vomiting in pregnancy was controlled by it. It even had a perceptible inhibitory influence in a few cases of epilepsy. One young man found himself able to abort a seizure by introducing a crab's-eye into his own conjunctival sac whenever he felt the approach of an aura. In this way he was able to abort all seizures for several months, after which the reflex seemed to lose its inhibiting power. This treatment had no effect in nervous cough or nervous asthma. In fact they could be induced by it, but never inhibited. A patient with chronically recurring hay fever took the snuff as a preventive measure a fortnight before the usual date of its appearance and passed through the summer without the usual symptoms.

Wiener Med. Wochenschrift, June 22 and 29.

Etiology and Signs of Enteroptosis. J. Csemi.—Many assert that nervous dyspepsia and enteroptosis are identical.

that is, the cause and the symptoms are the same in each. Stiller has called attention to the mobility of the tenth rib as a sign of a congenital tendency to enteroptosis. He calls it the stigma of enteroptotic neurasthenia as it not only accompanies every case of pronounced enteroptosis, but is an index of the extent of the morbid process. Cseri states that he has noticed that patients of this category always present pronounced lordosis. The pelvis projects, the lumbar region hollows inward and the buttocks project upward and backward more in a horizontal plane. This deprives the abdominal organs of the natural supports supplied by the normal, more vertical position of the lower portion of the trunk. He adds this tendency to lordosis to the other stigmata of enteroptotic neurasthenia—the loose tenth rib and the long thorax. [Zweig reports in the *Archiv. f. Verdauungs.* vii, 3, that the loose tenth rib is not exclusively limited to nervous dyspepsia, as he has observed it in a few patients who have never had any symptoms of this particular form of dyspepsia.—Ed.]

Puerperal Gangrene of the Legs. E. Mandl.—In the twenty-two cases of puerperal gangrene which Mandl has collected, the gangrene made its appearance during pregnancy in four, and great compression of the pelvic veins during the course of the pregnancy was noticed in several others, especially his own personal case and Wormser's. In both of the latter the physician was sued for damages by the family, but the courts dismissed the suit. In his case, a healthy, vigorous primipara, after a spontaneous birth with complete laceration of the perineum, exhibited signs of phlebothrombosis with indications of gangrene, affecting both legs, on the seventh day. When the right leg was amputated all the vessels, both veins and arteries, were thrombosed from the foot to the lower third of the thigh, so that circulation was completely suspended. In the cases on record only 2 were bilateral. Heart disease was evident in 2 and suspected in 1. All recovered except 2, one of whom succumbed to pneumonia after amputation. Physicians should be on the lookout during pregnancy for conditions suggesting possible future gangrene.

Treatment of Tuberculosis by Mechanically Induced Hyperemia. A. Schenk.—Persons with a tendency to tuberculosis usually have large lungs and a small heart. The heart is unable to keep the lungs adequately supplied with blood, and the apices, where the circulation is most deficient, are the points usually first affected by the bacillus. Schenk combats these conditions by mechanically inducing hyperemia throughout the lungs, most intense at the apices. He accomplishes this by having the patients recline on an inclined plane, the feet higher than the head, all day long, out of doors in dry weather. He supplements this position-treatment by a hollow, rubber jacket allowing circulation of hot water at 113 F., which is worn for several hours morning and evening. An attendant sponges off the feet, hands and abdomen every five minutes with cold water. At the slightest indication of cardiac insufficiency, he has an interposed coil of tubing in which cold water circulates, placed over the heart. The effect of these measures on the expectoration and other symptoms is surprisingly favorable, especially after sleeping with the head low all night.

Gazzetta Degli Ospedali (Milan), August 25.

The Mosquito Theory of Yellow Fever. G. Sanarelli.—Since Sanarelli returned to the chair of hygiene at Bologna he has continued his studies of the icteroid bacillus, and remarks now that it would be far better for the cause of science to have this bacillus studied in laboratories at home, rather than to send susceptible and inexperienced men to study the disease in its haunts to die like young Meyers. The icteroid bacillus has been isolated for four years according to the strictest rules of bacteriology; it is at the disposal of any who wish to test it; it reproduces in animals exactly the same symptoms and lesions as yellow fever in man—according to the testimony of every one who has seriously investigated it—and it thus responds to all the conditions and requisites which should characterize the specific agent of yellow fever. One experience on man or, better still, one auto-experience would be worth more than all the theories and discussions in the world. He cites history to show that contagion has occurred in Philadelphia, Baltimore and other places where yellow fever is unknown, from contagion by means of garments formerly worn by a yellow-fever subject, but which had been packed away in trunks for two, five and even seven years. He states that yellow fever has appeared at Cuzco, Caraccas and other South American points thousands of feet above the level of the sea, far above all mosquito-breeding swamps. It even crossed the Andes and infected mountainous regions in Peru, at altitudes of 13,500 feet in the epidemic of 1855-56. He devotes pages to citations of various instances of contagion in which the intermediation of mosquitoes seems impossible or superfluous. Most of them are taken from the reports at the Geneva Congress of 1882, or the publications of the French authority on tropical diseases, Berenger Feraud. He states that the mosquito bites which are assumed to have been the means of infecting Dr. Carroll, lose their significance when we read that he was all the time attending patients in the Las Animas hospital, "where yellow fever patients were admitted in large numbers." Also that he had been occupied three days before in the dissecting-room where Agramonte had dissected a yellow-fever cadaver a few days previously, and which was very dirty. It seems very natural that he should have contracted yellow fever under these circumstances. Sanarelli himself had a light attack of yellow fever during his first researches at Rio, although he spent his nights in a remote, healthy suburb. It did not require much effort of the imagination, he observes, to attribute the infection to hospital contagion. He also criticises the case of the young soldier who showed symptoms of yellow fever after having been bitten by mosquitoes known to have sucked the blood of yellow-fever patients. He points out that the fact is stated in the report that the young man had made a surreptitious visit to the seashore fourteen days previously without leave, and he might have afterwards stolen away for a brief trip to some infected point without the knowledge of his superiors. Sanarelli does not deny that the mosquito may be casually the bearer of infection, as flies and other insects may accidentally transmit any infectious disease. Lazear was bitten by a mosquito while he was visiting a yellow-fever patient and drawing blood from him. It was assumed that the mosquito must previously have sucked the patient's blood, as Lazear developed the fever and died in consequence. Sanarelli exclaims, "Was it worth while to make such a fuss and call the attention of the world to a theory which the most superficial investigation shows to have no serious foundation, but which leads its authors to proclaim absurd deductions, such as the uselessness of disinfection in the prophylaxis of a disease that from remotest times has always shown itself one of the most highly contagious in human pathology!"

New Patents.

682,050. Apparatus for separating solvent vapor from air. Walter Erben, Philadelphia.

681,882. Coagulant and making same. Ira H. Jewell, Chicago.

682,084. Electric temperature indicator. Frank L. Jobson, Richmond, Va.

682,089. Medicinal electrode. Orville L. Leach, Providence, R. I.

682,090. Surgical dressing packer. John E. Lee, Conshohocken, Pa.

682,103. Making substitutes for mother's milk. John Meyenberg, Kent, Wash.

681,806. Lung-protector. Armand Mignault, Salem, Mass.

682,110. Syringe. James Murray, New Haven, Conn.

681,975. Surgical instrument. John N. Ranger, Evansville, Ind.

681,741. Medicament device. Gustav Schirmer, Chicago.

681,758. Atomizer. Charles L. Turner, Malden, Mass.

682,123. Hay-fever disk. Wm. R. Wilson, Denver, Colo.

682,522. Sterilizer case. Wm. and J. Boekel, Philadelphia, Pa.

682,235. Hernial truss. Charles E. Brooks, Marshall, Mich.

682,171. Sterilizer. Richard W. Cartter, West Springfield, Mass.

682,455. Respiratory hood. George A. Cooper, Pittston, Pa.

682,181. Producing albumoses. Georg Eichelbaum, Berlin, Germany.

682,547. Diffusion apparatus. Ludwig Hirt, Grevenbroich, Germany.

682,549. Casein powder. John A. Just, Syracuse, N. Y.

682,269. Syringe attachment. James G. Poe, Dallas, Texas.

682,270. Abdominal supporter. Fanny Portugal-Hirschberg, Chicago.

682,344. Medicated fabric. Claude A. O. Rosell, New York City.

682,503. Abdominal supporter. Rachel Strasburger, Butte, Mont.

Queries and Minor Notes.

STATES NOT REQUIRING EXAMINATION.

St. Louis, Sept. 18, 1901.

To the Editor:—Please let me know where a graduate in medicine could practice without passing the State Board examination.

M. S.

Ans.—The laws of the following states admit graduates to practice medicine without examination, under varying conditions: Arkansas, Colorado, Kentucky, Michigan, Nevada, Nebraska, Oklahoma, Rhode Island, South Dakota and Wyoming. In some of the states only diplomas from certain schools are recognized; thus in Michigan the diplomas of some forty or fifty schools only are accepted and in Rhode Island similar scrutiny is exercised. In nearly all, more or less discrimination is made in regard to certain schools, but in these states more particularly than others.

SCOPOLAMIN-MORPHIN ANESTHESIA.

Corsicana, Texas, Sept. 14, 1901.

To the Editor:—In the issue of Aug. 17, 1901, on page 480, in article "Scopolamin-Morphin Anesthesia," the amount of scopolamin used is first given as .4 mg.; the second time as 4 mg. Kindly advise me which is correct, and is the article obtainable in English?

L. H. R.

Ans.—The former is correct. Instead of being .4 mg., it is given in the original 0004 of a gram. The total dosage advised by *Korff in the article in his proposed anesthesia is 12 decimilligrams*, or .0012 of a gram, in three doses of 4 decimilligrams each. The mistake is obvious and we think that no one will be misled by it. So far as we know there is no English translation of the article.

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

A Handbook of Pathological Anatomy and Histology, with an Introductory Section on Postmortem Examinations and the Methods of Preserving and Examining Diseased Tissues. By *Francis* Delafield, M.D., LL.D., Professor of the Practice of Medicine, College of Physicians and Surgeons, Columbia University, New York, and T. Mitchell Prudden, M.D., LL.D., Professor of Pathology and Director of the Department of Pathology, College of Physicians and Surgeons, Columbia University, New York. Sixth Edition with 13 Full-page Plates and 453 Illustrations in the Text in Black and Colors. Cloth. Pp. 819. Price, $5.00. New York: Wm. Wood & Co. 1901.

The Office Treatment of Rectal Diseases Explained and Simplified. Being an Exposition of the Treatment of All Those Diseases, Both Medical and Surgical, of the Rectum, Anus and Sigmoid Flexure, the Cure of Which May be Accomplished Without Surgical Anesthesia. Illustrated. By Rufus D. Mason, M.D., Omaha, Neb., Professor of Rectal and Pelvic Surgery in the John A. Creighton Medical College. Cloth. Pp. 83. Price, $1.50. Omaha: F. B. Festner. 1901.

The Microscope and Its Revelations. By the late William B. Carpenter, C.B., M.D., LL.D., F.R.S. Eighth Edition, in which the first seven and the twenty-third chapters have been entirely rewritten, and the text throughout reconstructed, enlarged, and revised by the Rev. W. H. Dallinger, D. Sc., D.C.L., LL.D., F.R.S., etc. With 22 Plates and nearly Nine Hundred Wood Engravings. Cloth. Pp. 1181. Price, $8.00. Philadelphia: P. Blakiston's Son & Co. 1901.

The Health Resorts of Europe. A Medical Guide to the Mineral Springs, Climatic, Mountain and Seaside Health Resorts; Milk, Whey, Grape, Earth, Mud, Sand and Air Cures of Europe. By Thomas Linn, M.D., Doctor of Medicine, Faculty of Paris. Cloth. Pp. 281. Price, 2 s. 6 d. net. London: Henry Kimpton, Hirschfeld Bros. 1901.

Schoolboy's Special Immorality: Addressed Especially to Those Who Have the Charge of Boys. By Maurice C. Hime, M.A., LL.D., Sometime Head-Master of Foyle College, Derry. Third Edition, Revised and Enlarged. Cloth. Pp. 115. Price, $0.35. Philadelphia: P. Blakiston's Son & Co. 1901.

Atlas of the Diseases of the Skin. By George D., Clinical Professor of Diseases of the Skin, and Surgeons, N. Y. Part 1. Paper. Phila- J. B. Lippincott Co. 1901.

T nual Report of the Secretary of the Sta of the State of Michigan for the Fiscal year 1899. Cloth. Pp. 241. Lansing, Mich.: Rob Co. 1900.

Transactions of the Indiana State Medical Society, 1901. Fifty-second Annual Session, held in South Bend, Ind., May 15, 16 and 17, 1901. Cloth. Pp. 646. Logansport, Ind.: Wilson, Humphreys & Co. 1901.

Biennial Report of the Board of Health of the State of West Virginia, and Report of Vital and Mortuary Statistics for the Years 1898-99. Paper. Pp. 183. Charleston, W. Va.: The Tribune Co. 1901.

Transactions of the Sixty-eighth Annual Session of the Medical Society of the State of Tennessee, Nashville, 1901. Cloth. Pp. 416. Nashville: Marshall & Brace Co. 1901.

Transactions of the Vermont State Medical Society, 1900. Published by the Society. D. C. Hawley, M.D., Secretary. Cloth. Pp. 195. Burlington: Free Press Association. 1901.

Proceedings of the New York Pathological Society for the Years 1899 and 1900. Cloth. Pp. 347. Printed for the Society. 1901.

The Public Service.

Navy Changes.

Changes in the Medical Corps of the U. S. Navy, week ending Sept. 14, 1901:

Medical Inspector H. Wells, ordered to the Boston Navy Yard, September 14.

Medical Inspector W. E. Taylor, retired, ordered to the Honolulu Naval Station.

Medical Inspector R. C. Persons, ordered to duty at the marine recruiting rendezvous, New York City, September 9, and to other special duty.

Surgeon M. H. Crawford, detached from duty at the marine recruiting rendezvous, New York City, September 9, and ordered to duty in connection with fitting out the *Illinois*, and to duty on that vessel when put in commission.

P. A. Surgeon D. N. Carpenter, detached from the naval hospital, Norfolk, Va., and ordered to duty in connection with fitting out the *Illinois*, and to duty on that vessel when put into commission.

P. A. Surgeon G. D. Costigan, resignation accepted, to take effect September 16.

Pharmacist J. Cowan, detached from the naval hospital, Mare Island, Cal., ordered home and granted sick leave for one month.

P. A. Surgeon C. E. Riggs, detached from the New York Navy Yard and ordered to the Port Royal Naval Station.

Asst.-Surgeon J. C. Thompson, detached from the Port Royal Naval Station and ordered to the *Columbia*.

Asst.-Surgeon R. M. Young, detached from the naval hospital, New York, September 14, and ordered to the New York Navy Yard, same day.

Asst.-Surgeon A. G. Grunwell, detached from the *Brooklyn* and ordered home.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General, U. S. Marine-Hospital Service, *during the week ended Sept. 14, 1901:*

SMALLPOX—UNITED STATES.

California: San Francisco, Aug. 25-Sept. 1, 2 cases.

Massachusetts: Aug. 31-Sept. 7, Boston, 13 cases; Medford, 1 case.

Minnesota: Minneapolis, Aug. 31-Sept. 7, 2 cases.

New Jersey: Newark, Aug. 31-Sept. 7, 9 cases, 2 deaths.

New York: New York, Aug. 31-Sept. 7, 6 cases, 4 deaths.

Pennsylvania: Philadelphia, Aug. 31-Sept. 7, 12 cases, 4 deaths.

Utah: Salt Lake City, Aug. 24-Sept. 7, 5 cases.

Wisconsin: Green Bay, Sept. 1-8, 1 case; Milwaukee, Aug. 31-Sept. 7, 1 case.

SMALLPOX—FOREIGN.

Belgium: Antwerp, Aug. 17-24, 1 case.

Brazil: Pernambuco, July 17-31, 44 deaths.

British Columbia: Vancouver, Aug. 1-31, 1 suspect.

Colombia: Panama, Aug. 26-Sept. 2, 12 cases.

Ecuador: Guayaquil: June 22-Aug. 7, 1 death.

France: Paris, Aug. 17-24, 9 deaths.

Great Britain: Leeds, Aug. 24-31, 1 case: London, Aug. 17-24, 41 cases.

India: Calcutta, Aug. 3-10, 2 deaths; Madras, Aug. 3-9, 7 deaths.

Italy: Messina, Aug. 16-24, 8 cases; Naples, Aug. 17-24, 115 cases, 22 deaths; Palermo, Aug. 19-24, 1 death.

Russia: Moscow, Aug. 10-17, 2 cases; St. Petersburg, Aug. 4-11, 12 cases.

Uruguay: Montevideo, July 18-25, 10 cases.

YELLOW FEVER.

Costa Rica: Liberia, Aug. 25, prevalent; Port Limon, Aug. 18-24, 8 cases, 1 death.

Cuba: Havana, Aug. 24-31, 7 cases, 2 deaths; Inoculation Station, Aug. 24-31, 1 case.

Mexico: Merida, Aug. 16-24, 2 deaths; Vera Cruz, Aug. 24-31, 3 cases, 2 deaths.

CHOLERA.

India: Bombay, Aug. 6-13, 9 deaths; Calcutta, Aug. 3-10, 6 deaths; Madras, Aug. 3-9, 45 deaths.

Japan: Island of Shikohu, Aug. 6, 3 cases; Yokohama, Aug. 3-10, 1 case.

PLAGUE—INSULAR.

Philippines: Camp Stotzenberg, July 13-20, 2 cases; Manila, July 13-Aug. 3, 26 cases, 21 deaths.

PLAGUE—FOREIGN.

India: Bombay, Aug. 6-13, 197 deaths: Calcutta, Aug. 3-10, 17 deaths; Karachi, July 24-Aug. 1, 17 cases, 13 deaths.

Japan: Formosa, Aug. 6, epidemic.

Straits Settlements: Singapore, July 20-27, 1 death.

China: Hongkong, July 27-Aug. 3, 13 cases, 11 deaths.

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Original Articles.

THE ETIOLOGY AND CLASSIFICATION OF CIRRHOSES OF THE LIVER.*

VICTOR C. VAUGHAN, M.D., LL.D.
ANN ARBOR, MICH.

The term cirrhosis was first applied to a pathologic condition of the liver, in 1819, by Laennec, who was led to select this name on account of the color of the liver—reddish-yellow or tawny. This term is an unfortunate one, inasmuch as the color of the liver in this disease varies with the relative amounts of fatty matter and biliary pigment in the tissue, and furthermore, it gives no indication of either the etiology or the pathology of the disease. Before Laennec, Fernel had written concerning the action of wine in causing scirrhus—induration—of the liver; Vesale had also discussed atrophy of the liver observed in alcoholics; Morgagni had spoken of ascites due to compression or occlusion of the intra-hepatic branches of the portal vein, and Baillie, in 1803, had recognized the relationship between dropsy and atrophy of the liver. However, credit should be given to the great teacher, Laennec, for bringing prominently to the attention of the profession one form of the diseases of the liver which is still designated by the name that he coined. The term sclerosis is also objectionable, because, while the hardening due to a cicatricial contraction may occur in the later stages, it is not a primary and essential feature of the pathologic process. Generally, members of the profession now understand by the term cirrhosis an abnormal proliferation of the connective tissue of the liver. The designation, interstitial hepatitis, is more suitable than either of the names already mentioned, but even this is not free from objection, because it is more than probable that in one form of the disease, or, more properly speaking, in one of the diseases designated by the term cirrhosis, the degenerative changes begin in the parenchyma of the organ and the involvement of the connective tissue is a secondary process. At first it was believed that the liver is always enlarged in the early stages and that the marked atrophy observed at autopsy is due to cicatricial contraction of the overgrowth of connective tissue.

In 1846, Requin called attention to the fact that hypertrophy of the liver is not always followed by atrophy, and three years later one of his students, Mesnet, reported a case of cirrhosis with extensive hypertrophy and reached the following conclusion: "Cirrhosis is not necessarily followed by atrophy. The two diseases, hypertrophy of the liver and cirrhosis can exist in the same individual. I can not agree with Cruveilhier, who holds that cirrhosis always consists of atrophy of the majority of the liver granulations and leads to diminution in the size of the organ, because at least two cases of cirrhosis with hypertrophy have been observed."[1]

In 1857, Todd, in a clinical lecture, contrasted the atrophic and hypertrophic forms of cirrhosis and stated: "The disease (atrophy), which no doubt is most frequently the result of intemperate habits in drinking, is very common, and all the cases resemble each other to a remarkable extent. It can not be discerned with certainty in its early stages, although no doubt a practiced eye would seldom be wrong, for the chronic changes which terminate in this shrunken and contracted state of the organ are, as I have already stated, most stealthy and insidious in their approach. A similar group of symptoms accompanies an enlarged and sometimes very much enlarged, condition of the liver, and systematic authors, especially those of late years, regard these two conditions as one and the same disease—cirrhosis. Indeed, they lay it down that the enlarged liver is an early stage of the contracted liver, and that the former by the gradual diminution of its size passes into the latter. I find it impossible to accede to this view, and I am anxious to call your special attention to the two cases that you may, as opportunities offer, direct your attention to their clinical phenomena, and watch whether the one can be traced into the other."

In 1871, Ollivier reported a case of hypertrophic cirrhosis, but it was the thesis of Hanot, in 1876, with the subsequent investigation of the same author and of others stimulated by his work, that has led to the recognition of hypertrophic cirrhosis as a distinct disease, and, for this reason, this form of cirrhosis is often designated as the cirrhosis of Hanot, in contradistinction to that of Laennec—the atrophic form. Fortunately another great French clinical teacher, Charcot, took up the subject and gave great impetus to the study. Charcot divided cirrhoses of the liver into the following:

1. An insular, monolobular, intralobular and interlobular form of biliary origin—the cirrhosis of Hanot.
2. An annular, multilobular, perilobular form of venous origin—the cirrhosis of Laennec.
3. A rare monocellular form observed in congenital syphilis.

Experimental research, clinical observation and the study of the pathologic conditions have confirmed the views of Todd, Hanot and others just mentioned, and we no longer recognize hypertrophic and atrophic cirrhoses as different stages of the same disease, but as distinct conditions, unlike in origin, in etiology, in symptomatology and in pathology. I will, therefore, proceed to discuss these separately, then compare and contrast them, and finally will speak of the mixed forms which are not infrequently seen.

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* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee of the Section: Drs. Frank Billings, George Dock and J. M. Anders.

[1] Similar cases were reported by Monnert (1852) and Gubler (1857), but I have not seen these reports.

ATROPHIC CIRRHOSIS.

Gross Appearance.—The liver is reduced both in size and weight. It varies in color and may be brownish, reddish-brown, reddish-yellow, gray or grayish-brown. The surface is covered with nodules which vary in size from those barely discernible to those as large as a filbert. The border of the liver is thickened, blunt and indented by fibrinous bands. On removing the strongly adherent capsule, the nodules stand out more prominently, and the appropriateness of the term, "hob-nailed liver," becomes evident. On section, the organ is found to be more or less hardened and the cut surface shows nodules of varying size surrounded by connective tissue.

Etiology.—As has been stated, the influence of the abuse of alcoholic drinks in the causation of this condition has long been recognized, and among the etiologic factors alcohol holds the first place. The more concentrated the alcoholic beverage, the more marked is the effect; consequently, brandy and whisky drinkers are more likely to develop this disease than are those who confine themselves to fermented and malted drinks. For like reason, those who take these alcoholic drinks on an empty stomach are in greater danger than are those who limit their potations to their meals. It has been stated that the more fusel oil there is in the beverage the more injurious is it in its effects on the liver. All alcoholics do not develop cirrhosis, and it is believed that a sedentary life contributes to the ill effects of the poison. De Giovanni thinks that a scrofulous taint favors the development of cirrhosis and that there is a congenital predisposition to this disease. However, this opinion is altogether theoretical and has, as yet, no scientific basis.

The positive evidence from clinical observation that alcohol is the most common cause of atrophic cirrhosis in man, has led many investigators to attempt to induce this condition in the lower animals by the use of this agent. It would require too much space and time to even enumerate all the investigations that have been made with this object in view. Most of these studies, some of which have been made in the most careful and painstaking manner, have given apparently only negative results, and it can be said that no one has succeeded in inducing well-marked interstitial hepatitis in the lower animals by administering alcohol to them. Notwithstanding this fact, these studies have been of much value in the extension of our knowledge of the etiology and pathology of atrophic cirrhosis, and it will be of service to us to briefly state here the effects produced in the liver by the experimental employment of alcohol.

The findings of Afanassijew may be summarized as follows: In dogs the continued administration of alcohol, either with or without amylic spirit, causes a degeneration of the hepatic cells, which swell, become more rounded and are easily detached from the stroma. The nuclei of many of these cells contract and fail to react normally to stains. In rabbits these changes are more marked and sometimes whitish maculæ may be seen macroscopically. These spots contain in their centers branches of the portal vein and sometimes continue along the peripheral parts of the lobules. The hepatic cells in the region of these maculæ show a more or less marked condition of coagulation necrosis. The cells near the center of the maculæ are more markedly affected, while in those at the periphery the destructive changes are less evident. In addition to the parenchymatous and fatty degeneration in chronic alcoholic poisoning there is observed a tendency to lymph stasis. This is especially observable in the liver, brain, stomach and intestines. Whether this is due to the retarded circulation from weakened heart action or to effects on the central nervous system can not be determined. The degenerative changes in the liver are in direct proportion to the severity of the intoxication. The addition of amylic alcohol intensifies, but does not alter, the character of the destructive changes.

The same investigator injected diluted alcohol directly into the portal circulation. The animals thu treated survived the operation and were killed from seven hours to eight days afterward; one dog was not killed until four months after the injection. The action on the tissues of the liver was found to be more pronounced when the alcohol was administered in this way The liver cells along the branches of the portal vein showed the following changes: The nuclei were shrunken and individual chromatin granules could not be recognized. The cell protoplasm appeared cloudy and finely granular. The cells themselves were contracted; the hepatic capillaries were dilated and filled with blood. These changes were not uniform throughout the lobules, but were distributed in patches, resembling the parenchymatous fatty degeneration observed as a result of the indirect action of alcohol. Similar appearances have been seen after long-continued administration by the mouth. With larger doses—from 2.5 to 5 c.c. of 48 per cent. alcohol—injected into the portal circulation, necrotic changes were obtained. Macroscopically the necrosis was observed as whitish spots of varying size on the surface of the liver. The necrotic cells were found to be surrounded by a zone of cells showing fatty degeneration and beyond these were seen normal cells. When the animal lived three or four days after the operation, the connective tissue cells of the stroma were found to be increased in number and numerous giant cells were observed. After a time true cicatricial tissue replaced the necrotic areas.

Afanassijew concludes his observations as follows: We have obtained by the injection of alcohol into the liver, also by continued administration by the mouth in rabbits, necrotic areas in the liver similar to those induced by phosphorous and arsenic. These necrotic areas stimulate the surrounding normal tissue and this stimulation leads to proliferation of the cells of the stroma and the development of giant cells. In short, this investigator believes that alcoholic cirrhosis begins by inducing changes in the liver cells, leads to fatty degeneration and necrosis, and that the proliferation of the connective tissue is subsequent to and consequent upon the changes in the hepatic cells.

Ackermann concludes his researches upon this subject with the following statement: "The proliferation of the connective tissue is not a result of the direct action of alcohol, but is due to the stimulating effect of the liver cells, altered by the action of the poison, on the connective tissue."

Practically all who have studied experimentally the action of alcohol on the liver of animals, have concluded that this poison causes granular and fatty degeneration in the liver cells. Some have reported slight proliferation of connective tissue, and the most reasonable conclusion is that which makes the connective tissue changes subsequent to and dependent upon alterations in the hepatic cells. When we remember that men often abuse alcohol for years before they develop a typical atrophy of the liver, we need not be surprised when we fail to induce a like condition in animals even after the administration of this poison for months, and it seems to me that with the clinical and experimental evidence before us, we are justified in coming to the conclusion that in alcoholic cirrhosis the pathologic changes begin in the hepatic cells.

Chronic phosphorous poisoning also has been long recognized clinically as a cause of atrophic cirrhosis, and a typical form of this disease, with ascites, has been developed experimentally in animals by the administration of this agent. In these experiments it has also been shown beyond doubt that the pathologic changes begin in the hepatic cells and that the proliferation of connective tissue is secondary. Aufrecht, after experimenting with phosphorus, reaches the following conclusion: "The parenchymatous inflammation is the primary process; in those cases in which the harmful agent acts long enough or powerfully enough to prevent speedy disappearance of the parenchymatous inflammation, secondary changes in the interstitial tissue develop as a consequence of the diseased condition of the parenchymatous parts."

Clinicians have frequently observed atrophic cirrhosis in cases of chronic poisoning with certain metallic compounds, and the experimental study of the effects of these agents on the lower animals has contributed valuable additions to our knowledge of the histogenesis of this disease.

The researches of Ziegler and Oblonsky, so far as they pertain to the action of arsenic on the liver, may be condensed into the following brief statements: Fatty change in the hepatic cells is always apparent and evidently is one of the early effects of chronic arsenical poisoning; indeed, in acute poisoning, when the animal dies in a few hours after the administration of a single dose, some of the hepatic cells can be seen on microscopical examination to be filled with minute droplets of fat. In some instances the degenerative changes in the hepatic cells are quite as marked as they are in the milder forms of phosphorus poisoning. In many animals fatty change in hepatic cells is the only change detectable. That some of the cells involved are still capable of multiplication is shown by the observation of typical karyokinetic figures. As a secondary stage in the progressive effects of arsenic, there appear necrotic areas; then, the periportal connective tissue is often found to be in a state of proliferation, which is indicated partially by the presence of more or less abundant karyokinetic figures and partially by the increase of cellular elements, and by the presence of numerous large cells with large nuclei and rich in protoplasm. It will be seen that in the order of development these changes correspond with those observed after alcohol and phosphorus poisoning. In some cases of chronic arsenic poisoning the fatty changes in the liver are more extensive than they are even after death from phosphorus, and when death is delayed for two or three weeks the hepatic cells show marked atrophic changes.

While chronic poisoning with the soluble compounds of aluminum is not known to occur in man, the researches of Siem and Dölken on animals show that these salts have much the same effect upon the hepatic cells of animals as those observed after poisoning with other metallic compounds. The liver is dark-red and the surface may be marked with prominent yellow blotches. The substance of the organ is somewhat friable and microscopic examination shows the hepatic cells undergoing granular and fatty degeneration.

Among the etiologic factors of atrophic cirrhosis, chronic lead poisoning has long been recognized, and Lafitte has induced a typical cirrhosis of the liver in rabbits by the long-continued administration of soluble salts of this metal. This author suggests that the presence of small quantities of lead in wine may be partially responsible for the cirrhosis observed in drinkers of this beverage. Atrophic cirrhosis is also likely to occur among smelters of copper, even when these men have been total abstainers from the use of alcohol. The effects of lead and copper on the tissues of the liver are practically the same as those of the other poisonous salts and of phosphorus and alcohol.

It seems to me that it must be admitted, from the evidence already presented, that in the development of atrophic cirrhosis the primary changes occur in the parenchyma of the liver and that the involvement of the connective tissue and the proliferation of the same is secondary to and consequent upon the necrotic changes in the hepatic cells.

There are believed to be other etiologic factors possibly concerned in the development of atrophic cirrhosis. Frerichs gave syphilis a prominent place in this list, and Thierfelder thinks that syphilitic cirrhosis differs from that induced by alcohol in the more uneven distribution of the pathologic changes in the hepatic tissue. However, since syphilitics are so frequently given to alcoholic excesses, some caution is necessary in reaching conclusions on this point. Cirrhosis sometimes accompanies amyloid disease and it is possible that both may be due to the same cause, especially to syphilis. Many English clinicians with large experience in India believe that the use of irritating spices and other condiments contributes to the production of cirrhosis of the liver so frequently observed in that country. The toxins of some of the acute infectious diseases, such as cholera, typhoid fever and the plague, are believed to be capable of inciting changes in the liver leading to atrophic cirrhosis. Semmola says, "Infective processes play a great part in the causation of cirrhosis." The same author assigns a prominent place to malaria among the causative agents of this pathologic state. It is quite the fashion at present to attribute most of the ills of life to autointoxication, and this much-abused and frequently misapplied term is found in many of the lists of the etiologic factors of cirrhosis. It is frequently said that it is not alcohol that causes cirrhosis of the liver, but that the drink so alters the digestive tract and its secretions that the products of an abnormal and imperfect digestion acting on the liver cause the histologic changes that result in this disease. Even were this a demonstrated fact, which it is not, the disease should not be termed one of the autointoxications, but should be said to result indirectly from the abuse of alcohol. In either case alcohol is the causative agent, whether it acts directly on the hepatic cells, or indirectly by altering the chemism of digestion. In either case the alcohol is the toxic agent and since it is introduced from without and is not generated within the body, it is not an autotoxin. As we have seen, alcohol, phosphorus and the metallic poisons, possibly also syphilis, malaria and other infectious diseases, are the most common factors in the causation of atrophic cirrhosis, and none of these are autotoxins.

Pathology.—Is the liver in the early stages of this form of cirrhosis enlarged? This question has met with conflicting answers. Laennec believed that hypertrophy always precedes atrophy and this view is probably the one most generally held to-day. On the other hand, Todd taught that when uncomplicated with other diseases, the liver in this form of cirrhosis is never larger than normal, and that from the first it begins to decrease in size. Rosenstein says: "Es giebt eine genuine Schrumpfleber, das ist die atrophische Form. Kein Stadium der Vergrösserung geht hier voraus." However, it is difficult to answer those who believe in primary hypertrophy. They say that hospital cases are not seen until contraction of the proliferated connective tissue begins and circulation in the branches of the portal vein is more or less interrupted, and they admit that even in private practice this disease can not be diagnosed with any certainty until atrophy begins, and yet they contend that there is hypertrophy primarily. It will be seen that an argument of this kind can not easily be refuted. However, we may safely say that there is no marked hypertrophy; if there be any, atrophy comes soon, and, as has been stated above, before a positive diagnosis can be made. We have seen in experimental atrophic cirrhosis that destructive changes begin in the parenchyma before any proliferation of the connective tissue and that there is no stage of hypertrophy. There is probably no absolute, mathematical relation between the rates at which destruction of hepatic cells and proliferation and contraction of connective tissue take place; however, as the latter results from the former, it is safe to assume that the effect is in proportion to the cause.

The character and localization of the proliferation of connective tissue are interesting questions in the study of this disease. Charcot designates the disease as annular, because the larger bands of connective tissue encircle the parenchyma and smaller bands divide these areas into segments. He also characterized it as multilobular, because the encircled areas embrace many acini. Charcot believed that the disease is essentially a phlebitis or a periphlebitis of the intra-hepatic branches of the portal vein—a view which has been disproved by more exact observations.

Aufrecht holds that there is in reality no true proliferation of connective tissue and this view seems to be in all probability the correct one. His statements on this point are so important that I shall take the liberty of condensing them into the following: In order to explain the pathogenesis of this disease it is desirable to mention the fact that simultaneously with the extension of the interacinous tissue, there is invariably contraction of the acini. The one does not occur without the other. The degeneration of the hepatic cells, which is the primary phenomenon in the development of the disease, begins always in the periphery of the acini and extends towards the center, and the altered hepatic cells themselves constitute the greater portion of the interacinous tissue. If sections of a liver in this disease be prepared with the Biondi-Heidenhain triple stain the cells in the periphery of the contracted acini will be found reduced in size. Reduction in size is not the only change observable in these cells. They have become spindle-shaped and their nuclei have undergone an analogous alteration in form. The latter are stained blue, while the protoplasm has a reddish appearance. In many cells, the nuclei are no longer detected and the reddish cells can be seen matted together in the interacinous tissue. This author concludes from these findings that the increase in the interacinous tissue is not due to the proliferation of the connective tissue elements, but to its augmentation by the altered hepatic cells. He says furthermore: We have to do here with a process similar to that by which the cells of the rete Malpighii of the skin are converted into the scales of the epidermis. "In atrophic cirrhosis the contraction is not due to proliferation of connective tissue, but to the shrinkage of *acini and groups of acini.* The small, non-nucleated spindles, into which the peripheral hepatic cells are converted, occupy much less space than the normal cells." He adds: This picture is not infrequently clouded by the marked fatty degeneration of the remaining cells of the reduced acini or by an acute atrophy of the same. The first is relatively frequent, then there appears to be a sharp line of demarcation between the remaining hepatic cells and the interacinous tissue, when unstained sections, or those colored with other reagents than that above mentioned are examined. In these cases the transitional forms are not recognized. Acute atrophy of the remaining hepatic cells is relatively infrequent, but that it does occasionally occur may be recognized clinically, by the terminal icterus accompanied by marked ascites and prolonged coma, and microscopically, by the total disappearance of hepatic cells of normal shape. The so-called newly-formed biliary capillaries are observed very rarely in atrophic cirrhosis, but Charcot is in error, as Ackermann has pointed out, when he states that the absence of these is pathognomonic of this disease, and their actual appearance excludes the possibility of a true cicatricial process in this disease.

It will be seen from the statements already made, and the evidence might be multiplied several times, that recent investigations have established the essential identity of the changes observed in the cirrhotic atrophy of the liver seen at autopsy and the changes induced in animals experimentally by alcohol, phosphorus and the metallic poisons. The differences are those of degree and not of kind, and when we take into consideration the length of time that is required to induce this disease in alcoholics, the differences in degree are easily understood.

Symptomatology.—This disease advances at first insidiously and generally manifests itself by ascites, which is an early and constant condition. Subjective symptoms may be wholly wanting, and in any case are by no means characteristic. The ascites is due to obstruction to the flow of blood in one or more of the intrahepatic branches of the portal vein. When the umbilical vein is not completely obliterated, and Baumgarten has shown that it frequently remains partially open, a collateral circulation may be established, and this leads to the appearance about the navel of what is known as the *caput Medusæ;* or anastomoses may be opened up between the portal vein and the inferior vena cava.[2]

In discussing the methods by which Nature attempts to establish a collateral circulation, Bamber says, "This is accomplished through the communication of the internal hemorrhoidal with the hemorrhoidal branches of the hypogastric vein, or by anastomoses between the vessels of Glisson's capsule and the diaphragmatic vein, also through the superior gastric and the esophageal, and through this with the azygos." Edema of the lower extremities may appear, but seldom does so until late in the course of the disease.

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[2] It might be noted that in very rare instances the inferior vena cava has been found to be strangulated by bands of connective tissue in the liver.

The spleen is generally enlarged. Whether this is due wholly to obstructed flow of blood through the liver or to coincident disease of the spleen can not always be determined.

Structural disease of the kidney is not a frequent accompaniment of atrophic cirrhosis, although albumin and casts may appear in the urine, and Semmola has reported the presence of peptone. In cases in which the ascitic accumulation is great the volume of urine is diminished, but according to Aufrecht this condition is attributable to weakened action of the heart. Semmola very properly, it seems to me, emphasized the desirability of making frequent quantitative determinations of the amount of urea, which is eliminated in reduced amount on account of the destructive changes in the hepatic cells, since these are concerned in its formation. However, such determinations are of no value unless strict account is kept at the same time of the amount of nitrogenous food ingested. With the decrease in the amount of urea eliminated in the urine there should be a corresponding increase in the amount of ammonia, and this condition has been reported by Halevoorden and Stadelmann, but I know of no exact scientific research on this point. It is believed by physiologists that one of the antecedents of urea is the carbamate of ammonia which normally is converted in the liver into urea; consequently, when a large proportion of the heptatic cells is diseased the amount of urea eliminated should be decreased and that of ammonia correspondingly increased.

There is generally a catarrhal condition of the digestive tract. Indeed, in most cases of atrophic cirrhosis, this disturbance of the stomach and intestines precedes the development of the changes in the liver, and is due to the same cause, i. e., alcohol. Hematemesis is not unusual, especially in alcoholic cirrhosis. The causes of frequent hemorrhages from the stomach may be stated as follows: 1, as has been stated, the digestive organs are already diseased from the local action of the alcohol; and 2, interruption of the flow of blood through the portal vein leads to distension of the gastro-intestinal radicles of this system. Not infrequently the hemorrhage is esophageal. and this is explained by the dilatation of the veins of the esophagus, through Nature's attempt to establish collateral circulation after the manner already mentioned.

Icterus is an unusual manifestation of this disease in uncomplicated form. The hepatic cells being diseased, it is probable that there is diminished formation of bile pigment, and the gall ducts being usually unaffected, there is free escape *per vias naturales* for all that is formed. During the later stages of the disease jaundice may appear and possibly be quite marked. This is supposed by some clinicians to indicate acute atrophy and it is often accompanied by coma.

HYPERTROPHIC CIRRHOSIS.

Gross Appearance.—The liver is always enlarged and may be enormously so, weighing in some rare instances as much as nine or ten pounds. The surface is finely granular and brownish or reddish in color. Adhesions to adjacent organs are frequently seen. In consistency the tissue of the liver is firm and may be very hard. Freshly cut surfaces are granular and of varying color, depending upon the proportion of bile pigment staining the organ.

Etiology.—There has been practically no scientific investigation into the causative agents concerned in the production of this disease; however, most clinicians now agree that it is of infectious origin, which view was, so far as I know, first suggested by Senator. I know of no thorough bacteriologic study of this condition; but the colon and typhoid bacilli are regarded as the most frequent infections, although a coccus, not yet well studied, has been found in some instances. Frequently both the bile and the liver tissue have been reported sterile, but since Adami has shown that it often requires many days for the development of germs actually existing in tissues, such evidence is not of value. Moreover, the bile may be actually sterile at a time when the tissue surrounding the ducts is undergoing most destructive changes through the agency of bacteria. The possible avenues of infection are from the intestines, through the gall passages and through the blood and lymph. The probabilities are that infection generally, if not invariably, comes from the intestines and is due to the extension of catarrhal conditions or to the passages of specific organism up the biliary tract. The frequency with which the typhoid bacillus finds its way into the gall bladder and its persistent growth in this viscus, has been attested by more than one observer.

Clinicians agree that alcohol is not a direct causative agent in this disease. Certainly hypertrophic cirrhosis may be developed in alcoholics, but quite as frequently it appears among those who have not abused this beverage. Indirectly, by causing irritation of the mucous membranes of the stomach and intestines and by converting this tissue into suitable culture beds for the growth of bacteria, alcohol may sometimes be a factor in the causation of this disease, just as it may play a similar rôle in the development of many other infectious diseases.

There is no sufficient reason for believing that any chemical poison, except bacterial toxins, are concerned in the causation of this form of cirrhosis. With our present knowledge it must be attributed in all cases to infection. While, as has been stated, the experimental proof of the bacterial origin of hypertrophic cirrhosis is largely wanting, the conclusion that it is due to infection is so well founded that much contrary evidence of the most positive character would be required to cast doubt upon this view. The evidence on this point may be briefly summarized as follows: 1. It frequently begins like an ordinary catarrhal jaundice, which seemingly becomes chronic. 2. It is often, if not invariably, accompanied by cholecystitis. 3. It is essentially a febrile disease with periods of remission and exacerbation. 4. It is accompanied by enlargement of the spleen and many of the lymphatics, as is the case in some of the infectious diseases. and, moreover, the enlargement of the spleen is not that due to obstructed blood flow, as is the case in atrophic cirrhosis, but appears to be similar to, if not identical with, that observed in other infectious diseases. 5. The primary changes occur in the epithelium of the gall ducts, where they would naturally be found by extension of the disease process from the intestines up through the biliary tract.

Pathology.—While there have been some differences of statement among those who have studied microscopically the changes in the liver in this disease, there seems now to be reasonable agreement on the essential points, which may be condensed as follows: 1. There are no destructive changes in the hepatic cells. According to Hanot, the integrity of the parenchyma is an absolute characteristic of hypertrophic cirrhosis. Some observers find no destructive changes in the hepatic cells, but do find evidence of unusual growth in this tissue. Ziegler says, "The size of many of the nuclei and their richness in chromatin, together with the size of the cells themselves, make it probable that in this disease there is proliferation of the hepatic cells and that the colossal size reached by the liver is not solely due to the proliferation of the connective tissue." Heineke states: "In the cirrhosis of Hanot the hepatic cells remain intact, neither shrunken nor fatty; the nuclei are normal and stain well; indeed, actual proliferation of these cells may be observed." Aufrecht makes the following statement: "It is an evident characteristic of hypertrophic cirrhosis that all the hepatic cells are enlarged, and contain a larger number of nuclei than under normal conditions. In these changes lies the criterion of hypertrophic cirrhosis." While all agree that the primary changes do not occur in the hepatic cells, there are those who think that destructive changes may result secondarily in the parenchyma. This opinion is held by Heineke, who states, "Primary degeneration of hepatic cells is with certainty excluded in Hanot's cirrhosis; indeed, the first proliferation processes do not occur in the vicinity of the lobules, but in Glisson's capsule and in the region of the larger gall ducts. The hepatic cells in most cases remain unaltered, and it is so constantly the case that Hanot and Schachmann insist that integrity of the parenchyma is an essential condition in hypertrophic cirrhosis with icterus. However, because primary degeneration of the hepatic cells does not occur is no guarantee that these cells always escape secondary effects. Conditions influencing the parenchyma may co-exist with those resulting in hypertrophy, and, indeed, may affect the part most highly involved in the hypertrophic process, but when the parenchyma does undergo destructive changes atrophy, or at least a decrease of the hypertrophy, must result." If I understand Heineke aright, he believes that the two processes (that of hypertrophy of the connective tissue and that of atrophy of the parenchyma may co-exist in the same liver; this amounts to mixed cirrhosis, to which I shall return later.

2. The primary changes in the development of this disease occur in the epithelial cells of the gall ducts. On this point there is some diversity of statement; certain observers have reported most extensive and destructive changes in the epithelium, while others have found evidence of pericholangitis, with the epithelium of the ducts intact; but when we remember that this disease may continue from one to eight or ten years before it causes death and that during its course it shows marked exacerbations and remissions, it is no longer a matter of surprise that the condition of the epithelium in microscopic sections is by no means constant. Hanot generally, not invariably, has found characteristic lesions in the gall ducts, with proliferation and desquamation of the epithelium causing obliteration of the lumen. The fact that icterus is one of the earliest manifestations of this disease and that this symptom continues to the end *pari passu* with the exacerbations and remissions, is strong proof of the early and constant involvement of the epithelium of the ducts in the inflammatory changes, because the icterus is best explained by the occlusion of the ducts. On this point Hanot remarks, "The lesions of the bile ducts and their more or less extensive obliteration by the young proliferating cells, together with the chronic inflammation of the surrounding tissue, by obstructing the flow of the bile, must be considered as the causes of the icterus." Heineke, after quoting the above from Hanot, adds, "I have found similar destructive changes in the epithelium in most of my cases. Besides occlusion of the ducts by desquamation of the cells, another hindrance to the flow of bile may be found in the formation of deposits in this fluid and consequent thickening of the same by inflammatory processes. Actual compression of the ducts by contraction of the connective tissue may occur in the later stages of the disease." It is a fact established by observation and experiment that certain bacteria multiply in the bile of the gall bladder, causing the formation of deposits, and that gall-stones originate in this manner has been quite conclusively demonstrated by Naunyn.

3. The tissue about the branches of the portal vein largely escape involvement in this disease, or are affected only late in its course. This explains the infrequency of ascites in hypertrophic cirrhosis.

Symptomatology.—This disease most frequently appears in persons under 40 years of age. Enlargement of the liver and icterus are the first prominent symptoms. Ascites is rare and is not marked when present. The causes of the presence of icterus and the absence of ascites I have already discussed. The disease generally runs a chronic course, with periods of exacerbation and remission which are accompanied by a rise and fall of temperature. As the disease progresses anemia and emaciation are marked and disturbances of the digestive organs become more prominent. The spleen and many of the lymph glands are enlarged. The urine is stained with bile, and the feces are generally normal in color, but may be colorless. Toward the close the patient may pass into a typhoid condition with marked fever and delirium.

CONTRAST AND COMPARISON OF THE TWO DISEASES.

Atrophic cirrhosis is sometimes designated as the cirrhosis of Lænnec and the hypertrophic disease as the cirrhosis of Hanot. The former is known as atrophic cirrhosis because from its earliest possible recognition the liver is less than normal in size; while the hypertrophic is known as such because at every stage of the disease the liver is larger than normal.

The atrophic is known as venous cirrhosis because of the early and constant involvement of the intra-hepatic branches of the portal vein; the hypertrophic is known as biliary cirrhosis because of the early appearance and constancy of icterus. The former might be known as toxic, and the latter as infectious cirrhosis.

In the atrophic disease, ascites is an early manifestation and is often marked; in the hypertrophic, ascites is frequently absent and is never great. In the atrophic, icterus appears late, if at all; in the hypertrophic, icterus appears early and is constant.

Finally, in atrophic cirrhosis the primary destructive changes are in the hepatic cells; in hypertrophic cirrhosis the epithelium of the gall ducts is the site of the primary involvement.

MIXED CIRRHOSES.

From what has been said concerning the etiology and pathology of these diseases, it must be evident that their co-existence in the same individual may be seen. As has been stated, alcohol is the most frequent cause of atrophic cirrhosis and indirectly it may contribute to the causation of the hypertrophic disease. If all cases seen clinically were well-marked, typical forms of either disease, diagnosis would not be difficult, but unfortunately this does not always occur. There are many well-marked cases of each disease and there are others which confound alike the clinician and the pathologist; many of these are undoubtedly due to the coexistence of the two diseases in the same individual. An infection may follow or precede an intoxication.

ADDENDUM.

While it was not my intention to say anything concerning the treatment of either of these diseases, I must be pardoned for adding just a few words on this subject. In atrophic cirrhosis the first thing to do is to discontinue the cause of the trouble, which, as we have seen, is most frequently alcohol. I will say nothing concerning the treatment of symptoms, but I do want to state that the pathologist has abundantly shown that when the cause is removed hepatic cells, even though undergoing marked fatty degeneration, may recover themselves. In my opinion the only scientific treatment for atrophic cirrhosis that has been proposed is that of Semmola, who reduces the amount of food to a minimum and administers this in a form least likely to tax the hepatic cells. He confines his patients to the use of milk, or when this is impossible, to milk and eggs. Digestion may be aided by the administration of dilute hydrochloric acid, and the action of the stomach may be improved by giving bitter tonics. The bowels should be kept in good condition, and this is best accomplished in this disease by the use of mineral waters. The heart must be watched and the administration of digitalis is often indicated.

In the treatment of hypertrophic cirrhosis small doses of calomel administered according to the method of Nothnagel have probably given the best results. When there is obstruction of the common duct, or when there is stone in the gall-bladder, surgical operation is clearly indicated, and I am inclined to the opinion that the time will come when surgery will be relied upon in the treatment of all cases of hypertrophic cirrhosis, inasmuch as it is possible only by operation to reach and disinfect the biliary passages.

For the purpose of saving space, I have refrained from giving the literature on cirrhosis of the liver, and I will refer those interested in the subject to the 13th volume of the "Real-Encyclopädie der gesammten Heilkunde," in which will be found an article by Aufrecht, followed by a fairly complete list of references up to the time of writing—1897.

ON THE TREATMENT OF CIRRHOSIS OF THE LIVER.*

J. H. MUSSER, M.D.
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Cirrhosis of the liver—often called alcoholic cirrhosis—is seen under the following circumstances: 1, without symptoms, the patient having died from other causes; 2, without symptoms until a climax is reached in the sudden outbreak of gastric or intestinal hemorrhage, terminating the life of the patient; 3, with symptoms due to obstruction of the portal vessels; 4, with those due to catarrh and obstruction of the bile ducts; 5, with combined portal and duct symptoms; 6, in very rare instances, a certain ill-defined cachexia, symptoms of auto-intoxication and the physical signs of a contracted liver, may suggest in a patient of alcoholic habits the presence of this form of cirrhosis. We will defer the consideration of the symptomatic treatment until a later portion of the paper.

The morbid process in alcoholic cirrhosis is clearly defined and if the diagnosis of the first stage, so-called, could be positively determined indications for treatment to combat this process are manifest. Knowledge of such process would lead us at once to suggest control or removal of the cause; regulation of the duty to remove undue stress of work of the organ; proper clothing to prevent congestions of viscera; climatic influences for a similar purpose; regulated exercise and an outdoor life after the more acute congestion has subsided, again to prevent internal congestions. In the more acute periods, absolute rest, hot baths, hot fomentations or douches, alternating hot and cold fomentations, or, if perihepatitis, ice to the surface. Blisters are often not amiss; dry cups are of the greatest advantage, relieving pain and the sense of fulness the large organ gives rise to. Depletion of the intestinal tract by means of purgatives can aid wonderfully and must be resorted to, the salines being preferable. Many therapeutists are fond of flushing the liver by draughts of hot water taken in the fasting stomach. Finally the enlarged organ should be supported by a properly fitted abdominal bandage.

The character of the process of the next stage does not give encouragement for direct treatment. It is doubtful if any method of medication can arrest or mitigate the process. The lines of hygienic, dietetic and climatic treatment suggested above may measurably lessen the rate of growth of the exuberant tissue and lessen the tendency to catarrh of the ducts. That nature sidetracks the organ is seen in the cases which have proceeded to great length without any symptoms. It is reasonable to suppose the efforts carried out as described above contribute to this end and make an environment of the economy, compatible with the presence of a diseased organ.

But no treatment of a process can be thought of that does not include the oft-called etiological treatment. This has been hinted at in considering the management of alcoholic cirrhosis. Similarly, if we suspect a sclerotic process secondary to organic heart disease, the treatment of the antecedent condition is essential. Indeed, even though the symptoms are not patent, in organic heart disease all management looking to the prevention of sclerosis must be conducted. If we find again syphilis can be invoked as causal, we have other plans of medication to take up, which in time arrest or assuage the process.

The Symptomatic Treatment.—It is evident cases of the first score can not be included in any scheme of treatment; cases of the second score, if they survive the outbursting symptom of the process, must be managed according as they fall into the remaining classes. Cases belonging to the third class fall to our lot for medical treatment more frequently than any other class.

Portal Obstruction.—It will not be necessary to outline to an audience of the practical and scientific acumen of this Section, the methods of treatment, either of the gastritis and the enteritis or the secondary effects thereof. Such treatment is based on such general and established lines that methods are beyond cavil. A word of caution is not unnecessary regarding the treatment of hemorrhoids. This venous condition is frequently a result of cirrhosis, and it is well known is attended by such state of tissues that invite infection. I have seen disastrous results follow a more or less rash, and, perhaps, septic operation. Of course, a cure is not so readily obtained as in other forms of hemorrhoids.

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* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs. Frank Billings, George Dock and J. M. Anders.

Ascites.—Again it is not necessary to rehearse the broad methods of treatment by diuretics, diaphoretics and purgatives, which are the common property of us all, the principles guiding us in their use as well as the hygienic management being well known. I wish by permission, however, to make record of some drugs which have been of service in my experience and some methods which must be resorted to before we dare cry "quits." Of the drugs, I would mention calomel. Small doses, frequently repeated, act well as a diuretic and can be relied on in many instances in which the stimulating diuretics, as caffein, strophanthus and other forms have failed. One-tenth of a grain every three hours is a dose which in four or five days brings on diuresis and gradual reduction by this means, and perhaps by absorption of the fluid.

Apocynum cannabinum, in doses of fifteen, twenty or thirty drops, four times daily, has in my hands proved valuable in reducing the ascites. It will often act as a purgative, a not necessarily desirable effect, which can, however, be controlled by regulating the doses. The oleoresin of copaiba, in capsules of ten minims every four hours, has also proved efficient in my hands. If not contraindicated by gastric or intestinal conditions it is often the most satisfactory.

Often medication will not relieve the ascites so that the fluid must be removed. We must not postpone the operation. A too great faith in medication, when kept up too long, permits pressure effects of the ascites which are not desirable, and also invites chronic peritonitis. Delays are dangerous. Tapping, to remove the fluid, should be resorted to early; and it should be done as frequently as the fluid forms. Nature taps often by allowing the water to break the thin umbilical bounds and ooze from the wound. Who has not seen the aspiration hole leak and leak until all fluid is drained, and perhaps remains away? I have seen ascites cured and the cirrhotic process arrested after the one hundred and fiftieth tapping. A cure is recorded of a case which was tapped more than 200 times. If tapping becomes impracticable, as sometimes occurs from thickening of the peritoneum, abdominal drainage must be resorted to. The cures are not as brilliant as in tuberculous peritonitis treated in this manner. Nevertheless, great danger lies in harboring an unusual amount of fluid. Again, if relief is not afforded, laparotomy and stitching the omentum to the anterior abdominal wall, establishing a collateral circulation, must be resorted to. The brilliant results of Frazier and other recent operators establish the feasibility of the operation.

Obstruction of the Biliary Passages.—Here again for reasons previously outlined, it is not necessary to dilate upon methods of treatment. I would call attention to the necessity of resorting to surgical relief in cases of obstruction with cholangitis and cholecystitis. A private patient, age 54, with alcoholic cirrhosis of the liver, cholangitis and cholecystitis, suffered from rigors and fever every week, the violent and most prostrating paroxysm, bringing him almost to death's door each time. Professor Martin drained the gall-bladder, giving entire relief to the symptoms and prolonging life nine or ten months. A large experience with these cases leads me to advise such operation early in the disease.

DISCUSSION ON SYMPOSIUM ON SOME CIRRHOSES OF THE LIVER.

Dr. Frank Billings, Chicago—There is no doubt but that in hepatic cirrhoses prominent symptoms may occur from what Dr. Stockton has indicated, first of all, from the obstruction to the circulation which manifests itself in ascites, or in dilatation of the veins, forming a collateral circulation, the ascites not appearing, but the intoxication occurring, especially in the atrophic form. Dr. Stockton has fully brought out this point. There are, however, points for discussion upon the cirrhoses considered from a clinical point of view. I have been surprised in the ordinary practice of medicine to find how frequently one discovers cirrhosis of the liver that is not advanced enough to produce either an ascites, nor, probably, a classic intoxication such as Dr. Stockton has indicated. There is a cirrhosis of the liver which can be detected by palpation; ordinarily one can not feel the liver and recognize it in the healthy state, everything else being equal; but when that liver becomes cirrhotic we may detect its edge. I have been surprised to find a large number of ambulatory cases in which the liver was palpable.

Dr. Musser has referred to congestion of the rectum being present in cirrhoses of the liver without there being visible hemorrhoids; in this the cirrhosis of the liver is sufficient to produce a slight mechanical effect upon the circulation, producing a proctitis, or, at least, producing enough congestion to cause bearing-down pains and pressure. This I have frequently seen, and I have frequently prevented surgical operation by medical treatment directed to the liver, which caused the hemorrhoids to disappear.

There is a form of cirrhosis of the liver that has passed the beginning stage, which has some relation to intestinal intoxication; it certainly has some relation to intestinal disturbances. For, if one places a case of that kind under good hygienic surroundings, with a proper selection of food, with attention to the excretions of the body, and especially to the unloading of the portal circulation by some simple means, the palpable liver will soon cease to be palpable. Years ago —nearly twenty years ago, I think—I read an interesting paper by Kussmaul upon muriate of ammonia; he administered this in the early stages of hepatic cirrhoses, claiming that it prevented proliferation of the connective tissue cells and so cured the cirrhoses in the early stages. Since then I have used muriate of ammonia in many cases of liver cirrhosis with the result that the induration has diminished and even disappeared. Perhaps the hygienic measures coincidently practiced may have produced the good effect ascribed to the drug.

Associated with mild cirrhosis of the liver there are symptoms of intoxication differing somewhat from those mentioned by Dr. Stockton. Many patients complain of lumbago-like symptoms; others of sciatic pain; others of musculo-spiral pain. They have this autointoxication, but it is not associated with drowsiness and hebetude, such as appears in true intoxication due to cirrhosis of the liver. In many of these cases I have found a hard, palpable liver, and, under the treatment mentioned, the symptoms have disappeared.

Dr. James B. Herrick, Chicago—We have heard much from Dr. Musser and from Dr. Stockton regarding the treatment of cirrhoses of the liver and they have dwelt upon the treatment of the milder cases of this disease, or the treatment of the disease in its incipiency. It is an extremely hazardous thing to venture a diagnosis upon symptoms of "biliousness," and yet the more one studies these cases the more one is inclined to view "biliousness" as an important diagnostic aid. A patient with coated tongue, headache, who is drowsy, with alimentary disturbances, with a sense of weight or pain in the right hypochondriac region, with a palpable liver, who is alcoholic, perhaps with hemorrhoids, can be suspected of having an incipient cirrhosis of the liver; and if there is any time in the history of this disease when we can do any good it is in the beginning. It has been my experience to see a few of these cases that have improved under treatment and I have ventured to place upon the history sheet, with an interrogation point after it, "beginning cirrhosis of the liver." Proper diet, with attention to the alimentary canal, and the giving of laxatives seem to do the most good. I have used, empirically, muriate of ammonia, because Dr. Billings had told me of his experience with it, and I wish to confirm what he has said in regard to its efficaciousness in these cases. Another remedy that I have used, in a measure empirically, is the salicylate of sodium.

Musser has referred to several cases in which operation has been successful. I have never been convinced of its advisibility in all cases and I would not advocate an operation save in exceptional instances. Not long ago I had a very instructice case occurring in a patient with atrophic cirrhosis of the liver. He was about the wards of the hospital for months. He had an ascites which was repeatedly tapped but it as often recurred. This patient was bothered a great deal by a large umbilical hernia which one day became strangulated. He was removed to the surgical wards and an operation was performed successfully. At the time of the operation a large amount of ascitic fluid was released. The liver was examined by touch and sight and found to be a typical one of atrophic cirrhosis. After the operation that man never had a recurrence of the ascites. One year later he died of pulmonary tuberculosis.

Dr. Musser has referred to chills and fevers. The most typical case of chills and fever ever seen by me was in a patient in whom there were daily paroxysms, and these paroxysms lasted for many months; this was a case in which I believed there was a hypertrophic cirrhosis of the liver with jaundice. The patient died from hepatic intoxication. An operation had been advised but was refused by the patient. Punctures of the liver revealed no pus and no micro-organisms. There was no reason to suppose the patient had gallstones. There was no malaria present. That chills and fever do occur in cirrhosis of the liver has been shown by quite a number of writers. Riva, for example, has dwelt at length upon the occurrence of chills and fever in cirrhosis of the liver and in syphilis of the liver.

Dr. Futcher's paper was very complete and it deserves discussion, but I do not feel competent to discuss it because I have never seen a case of hemochromatosis, except one—perhaps the case he referred to—shown by Dr. Osler at another Association. The thought has occurred to me whether or not there could be any connection between the purpura and the cirrhosis of the liver. Is the purpura the result of a toxemia or it it possible, on the other hand, that the repeated extravasation and disintegration of the blood can give rise to pigment and secondarily to the cirrhosis?

There is a cirrhosis of the liver called by the French a "mixed cirrhosis." We have cirrhoses of the liver that are clearly recognized, clinically and postmortem, as atrophic cirrhoses; on the other hand, we have cases that are just as clearly hypertrophic cirrhoses. I know that in practice I am frequently in doubt as to what name I am to apply to a given case of cirrhosis of the liver, for, in many cases, some features are those of the atrophic form and, in others, of the hyperthropic form. I have found that, in many cases, even the pathologist is in doubt, even when he has made a microscopic examination, because certain pathological findings are found that fit in with the atrophic form, and others that fit in with the hypertrophic form of cirrhoses. The French have described a "mixed cirrhosis" and it seems to me not only a convenient term to apply but one that is justified on clinical and pathological grounds. Patients who are jaundiced for three or four years, having frequent attacks of "biliousness," who become weak and lose weight, whose livers and spleens are enlarged with symptoms that denote obstruction to the portal circulation, we say are subjects of hepatic cirrhosis, and they die of hepatic intoxication. Such cases present some features of both forms of the disease; they are really "mixed" forms of cirrhosis.

Dr. Musser has also referred to the importance of hemorrhoids in cases of cirrhosis of the liver. I should also like to say, aside from the subject, that one should never forget to make a rectal examination for carcinoma of the rectum in cases of hemorrhoids.

Dr. William E. Quine, Chicago—The feature which has directed my attention more frequently than any other in this connection is one concerning the early identification of cirrhosis of the liver before ascites has made its appearance. Those of us who have been long engaged in the practice of medicine were taught that the identification of cirrhosis of the liver could not be made with any degree of certainty before ascites had made its appearance, but increasing experiences of this kind have taught us that an array of phenomena ordinarily makes its appearance pointing to its possibility and the diagnosis of chronic interstitial hepatitis may be safely predicated; there are evidences of auto-intoxication connected with the establishment of the collateral circulation which permits the blood from the gastro-intestinal canal to gain an entrance to the systemic circulation without passing through the liver; this furnishes by far the most important and striking of these phenomena. The symptoms have already been dwelt upon with a sufficient degree of minuteness which obviates the necessity of referring to them again. Dr. Stockton has directed attention to the liability of gastrorrhagia, associated with evidences of diminution in the size of the liver and more or less enlargement of the superficial veins of the abdomen. In the absence of ascites and the presence of these other phenomena he was able to predicate with some precision the liability of the occurrence of gastrorrhagia. This is a point in the early diagnosis of chronic interstitial hepatitis that is entirely new to me, but I am now ready to expect it and I have no doubt whatever, as I ruminate upon my own experience, that it is a point of value.

In relation to the treatment of cirrhosis of the liver, and particularly to the early treatment of it, my experience has been similar in kind to that of some of the gentlemen who have spoken and to some of the essayists who have introduced a consideration of the subject. I have never known any diuretic to make any impression whatever upon the ascites of cirrhosis of the liver. So far as I know the administration of such diuretics as digitalis, squills, calomel, or blue-mass, or any of those mentioned, uniformly fails to make any impression whatever upon the clinical course of the disorder. I have used the chlorid of ammonia. During the whole of my professional career, until quite recently, I have treated these patients exclusively upon the basis recommended by German writers. Unlike my esteemed colleagues I have never found any remedy which was of value in the early treatment of cirrhosis of the liver such as they claim for chlorid of ammonia. It is a medicine of very small utility. So far as any medicinal treatment of this disease is concerned the most efficacious consists, in my opinion, in the administration of moderate doses of hydragogue purgatives with a view of depleting directly and persistently the portal circulation. An auxiliary is to be found in the application of a firm bandage to the abdomen.

In my experience the omission of the application of a firm bandage immediately after the abstraction of the ascitic fluid by tapping or aspiration is a step that no practitioner can well afford to omit. The systematic and thorough bandaging, I do not hesitate to say, lessens the rapidity with which the ascitic fluid returns and, I have thought, increased the rapidity with which the collateral circulation is established.

I have had no experience with the establishment of permanent drainage, but it is a procedure which commends itself to me. I have had but little experience with the operative treatment of ascites due to cirrhosis of the liver. The case referred to by the speaker who just preceded me came under my notice after it had been operated on; it was one in which an operation was demanded in the course of a cirrhosis of the liver by reason of the occurrence of a strangulated umbilical hernia. In one other case that came within my knowledge the operative treatment for cirrhosis of the liver was promptly successful. If I was asked to choose now between these methods of operative treatment I should have recourse to permanent drainage before undertaking to establish vascular connections between the omentum and the parietal peritoneum, or between the omentum and the peritoneum lining the undersurface of the diaphragm.

Dr. William Bailey, Louisville, Ky.—In most of these forms we have gastro-intestinal disturbances which must be controlled by abstaining from alcohol, by proper dietetic regime, etc., and I am sure that by the administration of such remedies as phosphate of sodium, muriate of ammonia, etc., we shall accomplish some good. Where there is auto-intoxication, instead of giving the mild chlorid, I believe in the use of the bichlorid on account of its disinfecting influence upon the gastro-intestinal canal. That canal should be drained by means of saline cathartics, such as phosphate of sodium. I have had no experience with the surgical features, except by tapping. The circulation in the liver is better after tapping and drainage; therefore, I do not think we should allow the pressure to exist which comes from the increased accumulation of the fluid.

Dr. O. T. Osborne, New Haven, Conn.—I think we should be somewhat chary in making a diagnosis of beginning cirrhosis of the liver with simply the so-called bilious symptoms; we may have conditions of biliousness in intestinal indigestion, with headaches, etc., in which there may be some congestion of the liver which will give a slight enlargement that is not at all a beginning cirrhosis of that organ. Many cases that are treated as a gastritis are really trouble in the duodenum, and I think inflammation of the duodenum is of frequent occurrence. For a long time ammonium chlorid has been supposed to be almost a specific in inflammations of the mucous membranes of the air passages, but I believe that it is just as specific for inflammations of mucous membranes anywhere. If there is a catarrhal inflammation of the gall ducts giving symptoms of biliousness it is certainly well treated by this drug; it improves the condition here in the same way that it betters a bronchial catarrh. The congestion in the duodenum, or in the ducts, give a diminution in the amount of bile which should be thrown out into the intestine; therefore, we must get intestinal fermentation and an intoxication causing the bilious condition. Now, we know that salicylic acid is one of the best antiseptics that we have; hence, this drug would be a correct treatment.

I can not help but ask a question in connection with the treatment by anastomosis. We know that, in cases of tuberculosis of the peritoneum with a large amount of ascitic fluid, simply opening up the abdominal cavity is productive of great good. I should like to ask how much the opening of the abdomen and how much the anastomosis had to do with the good results obtained in the case reported by Dr. Herrick?

Dr. Robert B. Preble, Chicago—I should like to speak of a limited experience with the Talma operation. I have found in the past four years but two cases of atrophic cirrhosis in which operation seemed to be justifiable; one of these died immediately from the effects of the operation, and in the other, *the operation did not produce any beneficial effect. Since* the operation the second case has been tapped at intervals of ten to fourteen days and, so far as can be seen, there has been no effect except that upon the abdominal wall there is now developing a fairly well-marked collateral circulation which was not present before the operation. I have seen but one case in which the operation was followed by brilliant results.

I wish to question a statement that has been made in reference to the presence of hemorrhoids. Lécorché has stated that hemorrhoids are not more common in cases of atrophic cirrhoses than in patients in general. When I first read this statement I was very much surprised, but since then I have particularly inquired into this question and I must confess that it is a correct statement. Hemorrhoids are not more common in atrophic cirrhosis of the liver than in patients in general.

Gastric hemorrhages due to atrophic cirrhosis are more common than formerly supposed, although strictly speaking these hemorrhages are not gastric; a better term would be "esophageal." A very small portion only of the hemorrhages are from the stomach, but it comes from the veins above the cardiac end of the stomach. The lower end of the esophagus bears somewhat the same relation to the portal circulation as does the rectum; the blood there fuses in somewhat the same way with the systemic circulation as it does about the rectum, although the physical conditions are different. The veins of the lower end of the esophagus are within the thorax, and the abdominal are not. With each inspiration a negative pressure is created within the thorax and in a way aspirates the blood directly from the portal veins into those above the diaphragm. This would favor the development of anastomoses between the veins of the stomach and those of the esophagus, so much so that we would expect the varices to be more common in the esophagus than they are. It is easy to see how the veins of the esophagus could be injured by the passage of a rough bit of food or some instrument and hemorrhage result.

It is extremely difficult to differentiate these hemorrhages from those occurring in ulcer of the stomach. I have had a personal experience in five cases in which such hemorrhage occurred and all had these points in common: all were beyond 40 years of age, one being 55; all were addicted to the use of alcohol; all were taken with hematemesis when at work and there were none of the ordinary symptoms of gastric ulcer present. After the occurrence of the hemorrhages they all died, and it was then found that the source of the hemorrhage was an ulcer of the stomach.

Dr. G. W. McCaskey, Fort Wayne, Ind.—I wish to mention a case which, according to the facts stated by Dr. Musser, comes close to the "high-water-mark" with reference to the number of tappings for ascites. The patient was under the care of my colleague, the late Dr. James S. Gregg of Fort Wayne, and during my association with him in the case about one hundred and twenty aspirations were made. The patient then removed to Chicago where frequent tappings were kept up until his death two or three years later and it is probable that he was tapped one hundred and fifty times.

Concerning the etiology of cirrhosis of the liver, I wish to emphasize the importance which I attach to clinical observation of primary disease of the gastro-intestinal tract. There is a large group of cases which I believe, as stated by one gentleman in this discussion, have their origin in these conditions. While the statement is not susceptible of demonstration, I believe it is a fact that in the majority and perhaps in all cases of chronic gastro-intestinal disease we have at least an initial cirrhotic condition of the liver. Boix, in his little brochure on the liver of dyspeptics, says, if I remember correctly, that it is not so much the result of the alcohol as of the gastritis and enteritis due to the alcohol. My own observations in dealing with a large number of chronic cases of this character leads me to practically the same conclusion. Of course, there are other causes for cirrhosis of the liver which I will not consider.

Dr. Clarke Gapen, Madison, Wis.—I do not believe that anyone can fail to be interested when he takes up the subject of ptomains and notes the enormous number of new clinical combinations that are produced as the result of decompositions occurring in the intestinal tract, some innocuous and others exceedingly poisonous. In investigating this question I have come to the conclusion that, in nine out of ten cases, the true explanation of the so-called liver of intoxication is the development of some of these poisonous substances which are absorbed into the blood and so find their way to the nervous system and liver tissue and so produce their effects. Therefore, as the result of my own experience, I have, for some time past, pursued a treatment that was directed towards the prevention of such decompositions and the elimination of their products. One gentleman has alluded to the salicylate of sodium as being of value in these cases and I have no doubt of his correctness, but I have found that this agent is exceedingly irritating and decomposes in the upper alimentary tract and so is liable to aggravate the condition. I remember a case occurring two years ago which had resisted almost everything; it was characterized by alternating constipation and diarrhea with offensive stools, etc. In this case I used guaiquin, which is a combination of guiacol and quinin, and within three days all the symptoms disappeared. I think that of all remedies pure water in large quantities is the most effective. This idea was suggested to me by the methods in vogue at one of the noted mineral springs of this country. The patient there is directed to drink two glasses of water; then walk a mile; then drink two more glasses, and walk a mile; and this is kept up until the alimentary canal is washed out and the toxemic symptoms disappear. I give water in these cases with the principle in view that if water is poured in at the top of an open tube it will run out at the bottom. I have had, recently, two cases in women who were profoundly bilious subjects and who presented symptoms of so-called liver toxemia whom I treated in this way with great benefit. The relief of the constipation was not sufficient in either of these cases. In both, however, I gave benzozol, which breaks up in the lower part of the alimentary tract well down in the small intestine; guaiquin will also do this and is an excellent tonic remedy as well as an intestinal antiseptic.

DR. GEORGE W. WEBSTER, Chicago—I wish to call attention to one or two symptoms occurring in those cases where there is a considerable collateral circulation established, and in which ascites develops suddenly. If the belly be tapped the fluid rapidly refills and the patient goes on to a rather speedy death in spite of the treatment. During the past two years I have seen two cases which came to autopsy. In one there was no ascites at first but there was a large collateral circulation established; later ascites occurred very suddenly; the patient was tapped, but within thirty-six hours the enlargement of the abdomen was as great as it was before; the fluid reaccumulated in spite of frequent tappings, and the patient died within six weeks.

In another case, there was a fair amount of fluid in the abdomen, but very little collateral circulation. In this case, too, there was a very rapid re-accumulation of fluid, the abdomen refilling within thirty-six hours after tapping. A thrombus of the portal vein was found at the postmortem in both these cases. I think it was Welsh who first called attention to this point.

It has been my experience to find that the inferior hemorrhoidal veins are enlarged; but more often there is an enlargement of the veins in the lower end of the esophagus. All of these cases have gastro-intestinal symptoms and many times patients come to the physician for treatment of some stomach trouble and it is very common for them to receive such routine measures as the Ewald test breakfast with washing out of the stomach; the introduction of the stomach tube has often been followed by fatal hemorrhage. Therefore, one should be very careful not to permit instrumentation of the esophagus in cases where we suspect varicose veins.

DR. W. H. NEILSON, Milwaukee—I am disappointed in the fewness of allusions made to the treatment of hypertrophic cirrhosis because our patients certainly suffer greatly from the nervous phenomena, the itching, and the other symptoms that are produced by the presence of bile, and yet we are not able to find any treatment for their relief. I merely rise to ask if there are any gentlemen present who can relieve these symptoms of this particular form of cirrhosis?

DR. CHARLES G. STOCKTON, in reply—I should like to get a little better understanding of Dr. Preble's views in the matter of the dilatation of the hemorrhoidal veins. I think that the Doctor will agree that the hemorrhoidal veins are very greatly enlarged, as a rule, in atrophic cirrhosis of the liver; but it does not always follow that there is a development of hemorrhoidal tumors with large descending hemorrhoidal veins. I fully agree with the statement that enlargement of the hemorrhoidal veins is constant in the atrophic form of cirrhosis of the liver. The criticism of the term "gastrorrhagia" when the hemorrhage occurs in the lower part of the esophagus is well taken by Dr. Preble; it is often esophageal in origin, but not always so.

DR. FUTCHER, in reply—I had hoped there would be more discussion on the subject of pigmentation in association with cirrhosis of the liver. I attribute the lack of discussion to the fact that this disease is undoubtedly very uncommon, as shown by the fact that only four cases have been reported in this country. I should like to utter a word of warning against the possibility of these cases being mistaken for Addison's disease. In the particular case of which I read brief notes a provisional diagnosis of Addison's disease was made when he first came under observation, but the existence of an enlarged liver and spleen and the presence of hemosiderin in the cells of the sweat glands and rete malpighii.

I am glad that Dr. Herrick referred to the possibility of purpura being a cause of cirrhosis of the liver. I might say that in Anchütz's series of 24 cases evidence of a hemorrhagic diathesis was present in only 6 cases. Purpura was present in moderate degree in 3 cases; in 1 case there was epistaxis; in another hematemesis and the sixth had hematuria. It will thus be seen that purpura did not play a very important part, either primarily or secondarily, in this series.

I should like to refer to a case at present in Dr. Osler's service at the Johns Hopkins Hospital. It is a case of purpura, of seven years' standing, occurring in a man 33 years old. During this time he had almost persistent purpura and he now has a diffuse purpura eruption below the level of the waist. An interesting feature of the case is the markedly enlarged liver and spleen. Dr. Herrick's suggestion that there may be an absorption of blood pigment in such cases, with consequent enlargement of the liver and spleen, is quite apropos in this case. It is possible that this case may be an anomalous form of hemochromatosis.

In regard to the experience with the surgical treatment of ascites at the Johns Hopkins Hospital, I may say there have been six cases operated upon by Dr. Bloodgood and Dr. Mitchell with, I think, results that have justified the operation. The first case was operated on by Dr. Bloodgood four years ago. He gave a marked alcoholic history. The usual operation of stitching the omentum to the abdominal wall was performed, and the patient was cured of his ascites, which has never returned. It is four years since the operation and this man has continued taking alcohol in large quantities and whenever he reports to Dr. Bloodgood he is in an intoxicated condition. This satisfactory result under such unfavorable conditions is very encouraging. In the second case operated upon there was but a temporary improvement. Two cases were not improved by the surgical interference. One case died twenty-four hours after the operation. There is now one case under observation in the hospital who was operated upon two or three weeks ago and up to the present time has been markedly improved. Nature had already set up an anastomosis between the omentum and the abdominal wall to which it was quite adherent. The transverse colon was also adherent to the anterior abdominal wall and in the adhesions large blood vessels were found.

A CASE OF ACROMEGALY PRESENTING CERTAIN FEATURES OF UNUSUAL INTEREST.*

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ST. PAUL, MINN.

In 1886 acromegaly was first introduced to the medical world, through the report of Marie, the name having been applied by him to a disease characterized by a progressive enlargement or overgrowth of certain portions of the body, all tissue being more or less involved, and the hands, feet and face being the earlier and chief seats of the morbid change. There can be no doubt concerning the close relation of acromegaly to giantism; indeed, it may be regarded as a sort of localized giantism. due to certain limitations in the pathologic seat and process, or to the age at which the disease begins. Acromegaly is so strikingly objective in its symptomatology that one finds it difficult to explain how it could have been disregarded for so many centuries. Up to 1891 only 37 cases had been reported, yet in 1893 the number had reached 83; in 1898, 218 had been reported, and at the present time nearly 300 cases are on record. Even this number does not rob it of its claim to rank as one of the rarest of diseases, nor has it in any way lost its interest for the clinician and pathologist.

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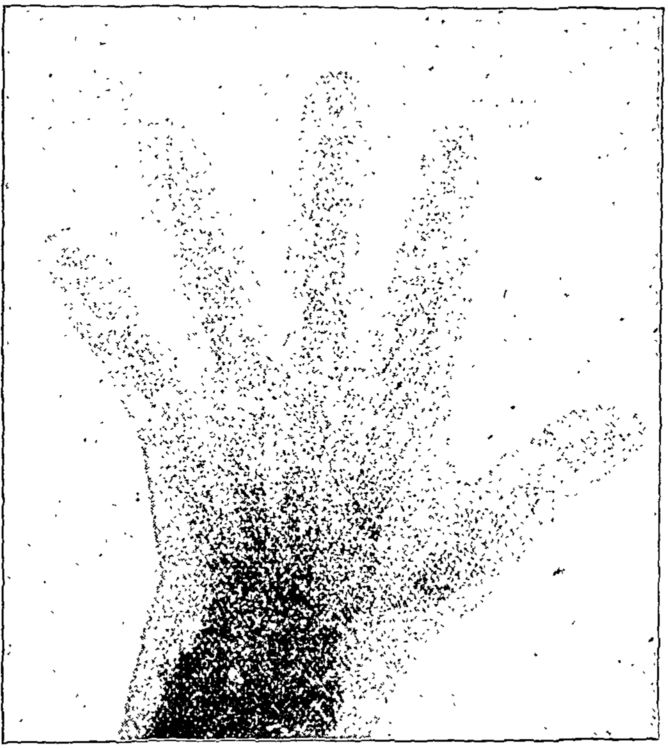
* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs. Frank Billings, George Dock and J. M. Anders.

Souza Leite, in 1890, first pointed out the fact that in nearly every case it was possible to demonstrate an enlargement of the pituitary gland. This curious gland, normally weighing but half a gram, has been found the size of a hen's egg or even larger, and by its peculiar structure suggests the possession of a double function. In its development its relation to both glandular and nervous structures is evident as its anterior portion is developed from the ectoderm of the buccal cavity, its posterior lobe from the fourth ventricle. The anterior portion is glandular in structure; the posterior contains nervous tissue and a close analogy to the thyroid gland is suggested. It is supposed to possess receptive, selective and elaborative functions. The possible connection between diseases of these two bodies, and hence between myxedema and acromegaly, is suggested by the fact that in myxedema the pituitary body is often enlarged, while in acromegaly the thyroid is frequently the seat of a sclerotic process.



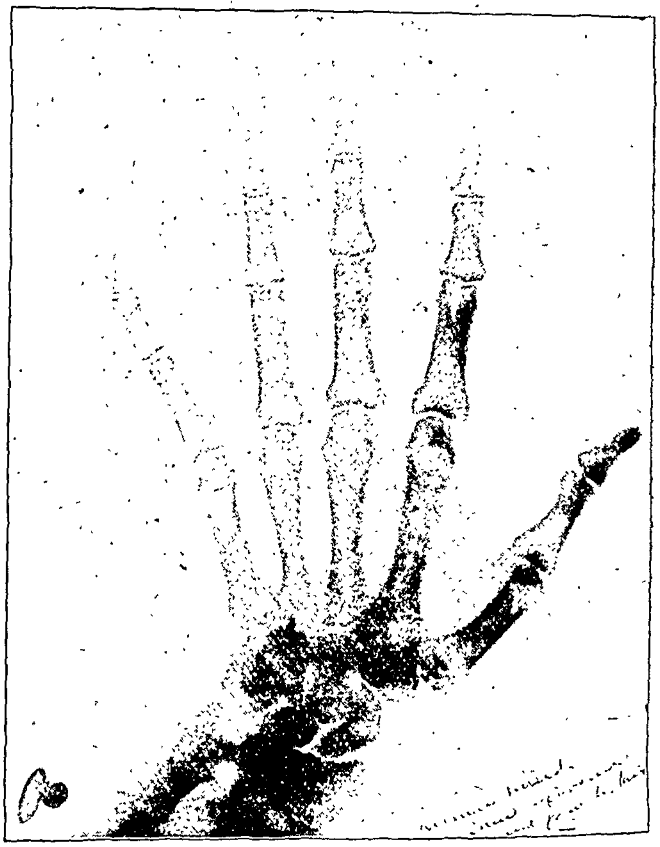
Author's case of Acromegaly.

A. Hymanson reported a case in the *Medical Record* of July 1, 1899, in which the close relationship or coincidence of these two diseases was distinctly suggested, and one of the most interesting features in the case reported below is found in the apparent combination or coincidence of the two diseases. In my patient there are also certain divergences from the type, which make the case one of peculiar interest. Exceptional opportunities have been offered for close observation, extending over a period of three years.

CASE REPORT.

The young man, Girard, is 25 years of age, has had no fixed occupation, but for some years prior to the development of the disease had spent the winter months on the ice, being employed as an ice-cutter, a point of some importance, inasmuch as the history of many of these cases has strongly suggested the influence of prolonged exposure to cold and dampness as a predisposing or exciting cause. The family history is negative. Lues venerea is denied, and there is no history of past illnesses of any importance. Three years ago he suffered from swelling of the knee-joints, which he naturally associated with his winter occupation; he also suffered from lassitude and a certain amount of general weakness, which prevented any steady work. Two years before this time, that is, five years ago, or at the age of 20, he noticed a rapid enlargement of the hands and feet, and the members of his family noticed and commented on the change in his physiognomy.

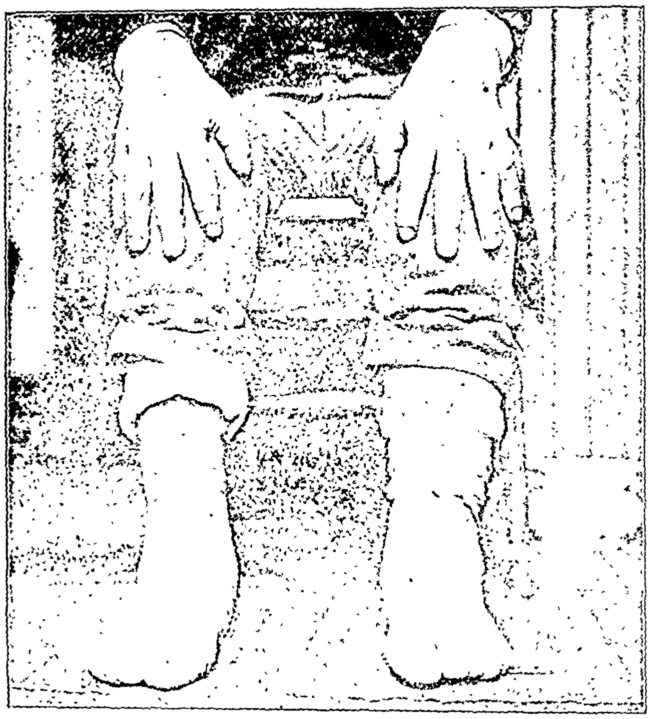
The enlargement of the hands and feet steadily continued and progressed quite rapidly up to the time that he presented himself in the writer's clinic, three years ago. At that time the following description of his appearance was placed upon the case record:



Normal hand, same exposure and focal distance.

> The hands and feet are enormous, the wrist and ankles free from inflammation but bulky, thick and in strong contrast with the forearms and legs, which in the upper four-fifths of their length are quite normal. The patient complains of langour and weakness but has had none of the severer vertical pains so common in acromegaly, nor does he complain of pain in the lumbar region or limbs. There are no signs of disturbance of the special senses nor of the nervous system. The skin throughout the larger portion of the body is nearly normal and lacks the harshness of myxedema. The appearance of the face is especially interesting; there the skin is thickened and hypertrophied, though not rough. Deep furrows have formed over the frontal region, both upper and lower eyelids are thickened and the ears appear clumsy and tumid. The superciliary ridges project, the nose is large and tumid, the nasal arch is prominent, the malar bones project markedly and the lower jaw, while not distinctly prognathic, is apparently enlarged both from the angle to the symphysis and vertically. The upper jaw is enlarged and the patient's attention has been called

to that fact by the gradual separation of certain of the teeth and by the marked forward projection of the superior dental arch. The enlargement of the upper jaw has no doubt masked the changes in the lower jaw, depriving the case of one of the so-called typical signs of the disease. Both the upper and lower lids are thickened and clumsy, the tongue is large but not excessively so, the larynx is enlarged as well, and its cartilages are apparently the seat of hypertrophy. No deformity of the spine or chest exists, nor are there any marked changes in the clavicles or the scapulæ. The fundis oculi is normal and the hands present the usual spade-like appearance with the sausage-like fingers and square, flat nails showing longitudinal striation. The radiograph demonstrates the remarkable enlargement of the bones both in length and thickness. The process seems to involve the lower fifth of the adjacent long bones, and of their overlying tissues, which present the same typical characteristics as the hands. There is no marked enlargement of the great toe, such as has been described in several instances; neither the hands nor the feet are the seat of pain, nor are their movements much restricted. A feature of especial importance, however, is the marked increase in the bulk of the overlaying tissues, which present the appearance and the sensation of a hard edema exactly like that of myxedema. Aside from the presence of dulness over the manubrium the internal organs seem to be normal. This dulness is supposed to be related to persistence of the thymus gland, a condition to which some writers would ascribe a great deal of importance and which some late investigators have shown to be present in a remarkably large proportion of these cases. The condition of the knees is simply indicative of chronic synovitis, the synovial sacs being tightly distended by the contained fluid. This description applies well to the present condition, save that the bony enlargement seems to have progressed, while the soft parts have shrunken to a marked degree.

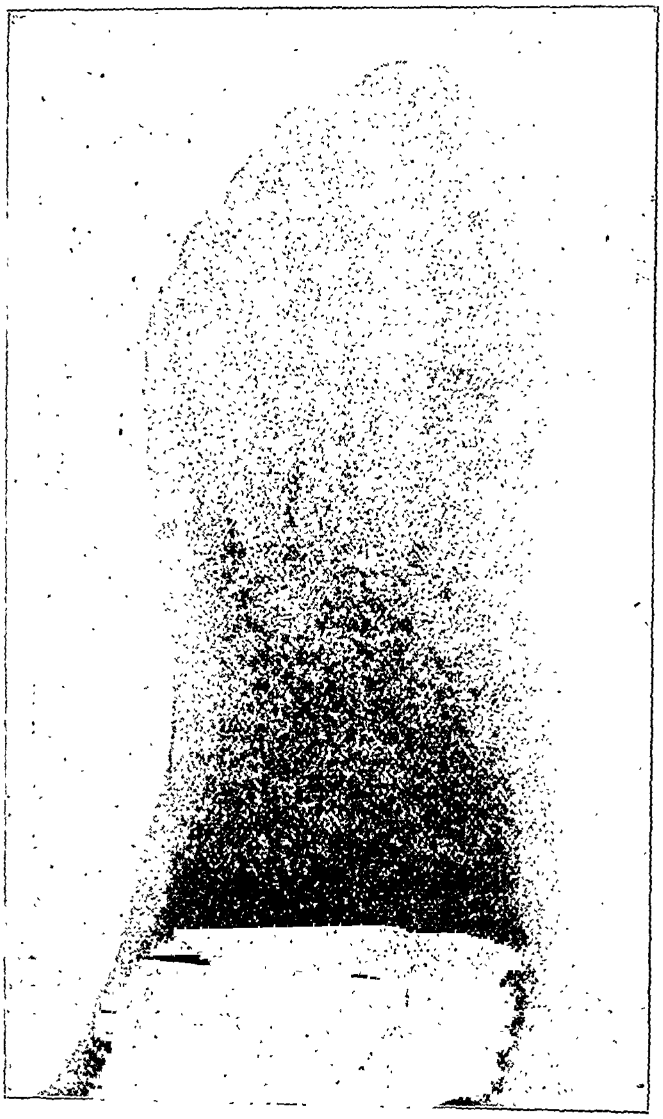


Author's case of Acromegaly.

The case seems to the writer to present several features of marked interest. It is sufficiently typical to make the diagnosis absolute: at the same time it lacks the marked prominence of the lower jaw and in certain respects strongly suggests myxedematous change. For the past five or six months the patient has suffered from cystitis due to a neglected specific, urethritis. This is slowly subsiding and it does not appear to influence the original disease in any way. The examination of the blood reveals nothing abnormal. The treatment has been solely by thyroid extract, the result being an immediate and marked amelioration of the myxedematous condition.

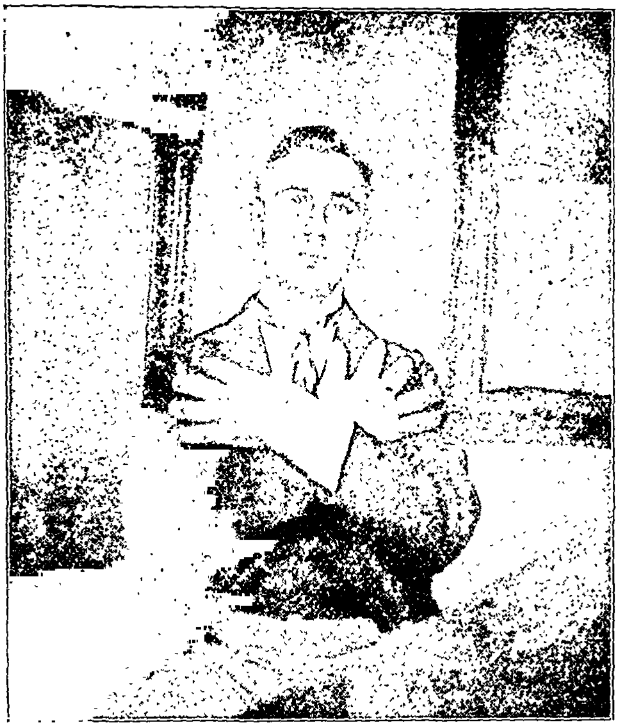
DIAGNOSIS OF ACROMEGALY.

Difficulties in connection with the diagnosis of acromegaly can rarely arise. The late symptoms are so striking that they offer an excellent opportunity for street-car diagnosis, and when fully developed the disease would seem to be quite unmistakable. It is customary, however, to point out the differences between acromegaly, osteitis deformans, myxedema and pulmonary osteo-arthropathy, though no one can hardly confound these diseases when they are fully developed. In the earlier stages myxedema and pulmonary osteo-arthropathy may offer some difficulty, and the following facts should be borne in mind:



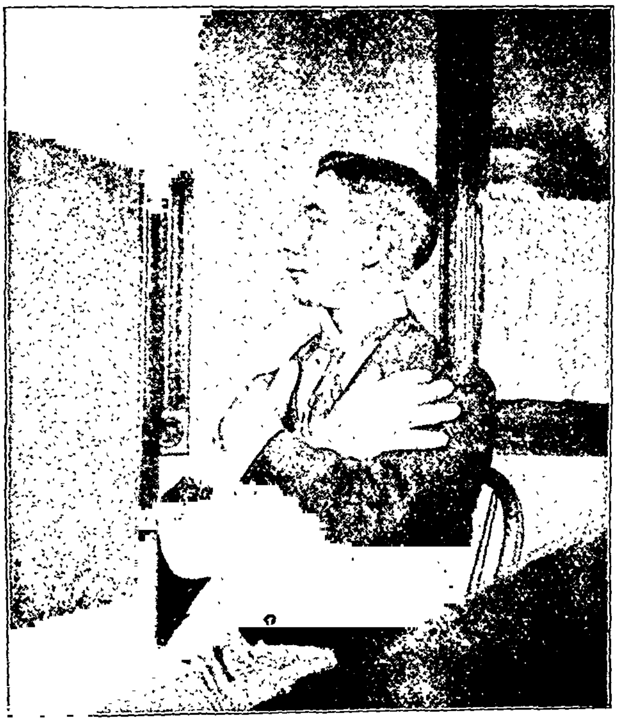
Author's case of Acromegaly. It will be noticed that a decided change is taking place in the great toe, though simple inspection does not reveal it.

Myxedema.—The hands and feet appear to be the seat of a hard edema—this symptom is present in this case—but the bones remain unchanged and the face is full and round, rather than ovoid, as in acromegaly. There is also well marked involvement of the soft tissues, falling of the hair, very often extreme tenderness over various portions of the body, and marked mental depression, apathy or irritability. In certain cases of acromegaly, as in this, it seems certain that myxedematous change is present, and pathologic research and the fact that some patients improve for a time under thyroid would indicate that the two conditions may coexist in the same individual.



Author's case of Acromegaly.

Osteitis Deformans.—The hands and feet are here unaffected and the cranium and shafts of the large bones are chiefly involved.



Author's case of Acromegaly.

Giantism.—This is symmetrical excessive growth and need not be confounded with acromegaly, though it is probably almost identical in etiology. Curious examples of localized enlargement affecting a single member have been noted, and in a case of acromegaly reported by Dr. Kanthack, the second toe of one of the enlarged feet was enormously hypertrophied.

Pulmonary Osteo-arthropathy.—In this disease the bones only are involved and the face is usually normal; the joints are often swollen and painful and there is usually a chronic pulmonary lesion. Moreover, the appearance of the hand is wholly unlike that presented by acromegaly, the changes being chiefly in the distal phalanges, which are clubbed and carry an elongated, curved nail.

PROGNOSIS.

These cases progress slowly, often lasting twenty to thirty years, tending to death by exhaustion, syncope or intercurrent disease.

TREATMENT.

The treatment of acromegaly has not kept pace with its pathology. Thyroid is sometimes of temporary benefit, and the pituitary body has been administered without marked effect. The conjoint administration of both remedies would seem to be indicated in my case. Marie has advocated the iodids, and others have spoken well of arsenic. Until we know more of this strange disease all treatment is at best a "forlorn hope," and our patient can hope for little aid or comfort at our hands.

Note: The clavicles and ribs now show marked enlargement.

THE INCREASING STERILITY OF AMERICAN WOMEN.*

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This investigation is based upon 1700 cases in private and dispensary practice in St. Louis: 1146 American-born, 357 Irish and Germans, 197 negroes. The Americans are grouped into the laboring class from dispensary practice, and the higher class from private practice; amongst these I have distinguished the native American, the American of American parentage, and the American of German and of Irish parentage; in addition, there are 2038 women taken from the genealogical records of Massachusetts.

The results obtained indicate that at the present time *20 per cent. and over of married women are childless,* whilst in the preceding centuries, in the earlier days of the country, only 2 per cent. were sterile; and when we compare these figures with the generally accepted rate of sterility, 11 per cent., found by Simpson and so generally accepted as to be called "Simpson's law," the difference is so great that it would appear that proof is needed before these facts can be accepted; it seemed impossible that sterility should have increased to such an extent in this country and that it should here be so much more common than in Europe.

To secure this proof I add the study of other records and of other of the phases of woman's functional life which are closely correlated; fecundity, intimately associated with sterility, varying in an inverse ratio, and miscarriage and divorce, which are directly parallel with childlessness.

This was necessary, too, because statistical and reliable data with regard to sterility are not numerous. Such as can be found I have here presented, mainly culled from gynecological writers; facts from other sources also were necessary to corroborate my results; valuable for this purpose have been the unpublished records from the dispensary of Dr. Chadwick in Boston, which he has kindly placed at my disposal, 1374 Americans, likewise grouped as Americans or American parentage and of Irish parentage, and 754 Irish. The vital statistics of Michigan, by Dr. Cressy L. Wilbur, afford valuable data as to fecundity among Americans and foreigners as in that state nationality of parents is noted. Similar data I have for Massachusetts from the unpublished manuscript of Dr. Kuczynski, elaborated from the state census, and this, in addition, presents statistics of sterility as well as fecundity. A proof more conclusive than any other one fact is the identity of my results with those deduced from the census of these two great states by the able statisticians who have presented them. The United States census gives only a very general estimate.

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* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Obstetrics and Diseases of Women, and approved for publication by the Executive Committee of the Section: Drs. A. H. Cordier, W. E. B. Davis and Henry P. Newman.

TABLE 1.—STERILITY.

Number.	Observer.	Sterility. Natural and artificial barrenness. Class.	Sterility. Natural and artificial barrenness. Nationality and Nativity.	Locality.	Total number of married women.	Per cent. of married women without children. Sterility. Absolute. Per ct.	Per cent. of married women without children. Sterility. Relative. Per ct.	Per cent. of married women without children. Total. Per ct.	Fecundity. No of children to each married woman.
1	. . . .	Genealogical Record, 1600 to 1850.	. . . .	American Colonies.	2038	. . . .	. . . .	2.0	6.0
2	Engelmann	Laboring class	All American born	St Louis	804	12.8	8 5	21.2	2.1
3	Chadwick	" "	" " "	Boston	1,374	. .	. . . .	23.72	1.77
4	Engelmann	Higher class	Americans of American parents	St. Louis	228	9.2	14.4	23.6	1.8
5	Chadwick	Laboring class.	" " "	Boston	874	.	. . . .	23.2	1.7
6	Engelmann	Higher class	Americans of German parents	St. Louis	114	17.5	8.8	26.3	1.9
7	Chadwick	Laboring class	Americans of Irish parents	Boston	334	. . . .	. . . .	27.2	1.9
8	"	" "	Americans of mixed parents	"	57	. . . .	. . . .	28.0	1.9
9	Engelmann	" "	Germans	St. Louis	188	10 3	6 5	17.0	3.5
10	"	" "	Irish	"	118	11 0	6 0	17.0	4.2
11	"	" "	All American born	"	1,146	13 2	10 6	23.7	2.0
12	Kuczynski	All classes	" " "	Massachusetts census, 1898.	. .	. .	. .	20.2	2.7
13	Engelmann	Laboring class	All foreign born	St. Louis	306	10 6	6 3	17.0	4.0
14	Kuczynski	All classes	" " "	Massachusetts census, 1898.	. . . .	. . . .	. .	11.2	4.5
15	Wright and Smith	College alumnæ	American born	United States	539	. . .	. . . .	25.3	1.6
16	Smith	Higher class—non-college	" "	" "	331	. . . .	. . . .	15.7	2.1
17	Sidgwick	College alumnæ	English	England	58	. . . .	. . . .	27.6	1.5
18	"	Higher class—non-college	"	"	87	. . .	. .	36.0	2.4
19	Simpson and Galton	British peerage	"	"	495	. . . .	. . . .	16.4	. . .
20	" "	Villagers	"	"	675	. . .	. . . .	9.6	4.5
21	Engelmann	Laboring class	Negro	St. Louis	197	14.8	9.5	24.3	1.9
22	Vogt.	" "	Norwegian	Norway	351	.	. .	2.5	5.8
23	de Ott.	Peasant	Russia	Kaluga district	175	. . . .	. . .	2.8	7.2
24	Beigel	Laborer and peasant	Alsatian	Alsatia	40,510	. . . .	. . . .	3.5	. . .
25	Szukits	Laboring class	Austrian	Austria	863	. .		7.4	4.5
26	Hannover	" "	Danes.	Denmark	243	. . . .	. . . .	10.3	4.7
27	Turquam	All classes	French	1774	. .	. . .	. . .	27.3	1.7
28	"	" "	"	1886	.	. . .	. .	20.0	2.0
29	"	" "	"	Paris, Lyon, Rouen	5,283	. . .	. . . .	27.3	1.5
30	Leudet	" "	"	Rouen	1,207	. . .	.	23.6	2.6
31	Mayer	" "	German	Berlin	5,195	17 2	3 2	20.4	3.5
32	"	Middle class	"	"	2,532	21 7	4.0	25.7	3.0
33	"	Laboring class.	"	"	2,763	12.7	2 4	15.1	4.0
34	Leudet	Higher class	French	Rouen	134	. .	. . . .	18.7	2.0
35	"	Peasant	"	"	153	. . . .	. . . .	15.7	2.5
36	"	Laboring class—city	"	"	920	. . .	. . . .	25.7	2.7

For the end of the eighteenth century valuable investigations as to fecundity in Massachusetts are to be found in the "Transactions of the American Academy of Arts and Sciences." Beigel, Mayer, Leudet, De Ott, Vogt, Szukits, Simpson and Mathews Duncan give important data for Germany, France, Russia, Norway, Austria and England, and Nathan Allen with regard to the New England states, Kuczynski for Massachusetts, and Wilbur for Michigan. Finally, for college women, Carroll D. Wright and Mrs. Mary Robert Smith in the United States, with Mrs. Henry Sidgwick in England, is our authority.

The facts presented corroborate my results in every detail and confirm the high sterility and low fecundity in the United States, conditions worse than in any European country save France, and for the native American population worse than that of France.

Definition.—It may be well to define the terms as here used, as they are not always applied in the same sense. By sterility I shall understand the condition of the woman who has been married three years without giving birth to a full-term child; by absolute sterility I hold to mean that she has never conceived; by relative sterility that she has conceived and miscarried, but has never given birth to a living full-term child;[1] abortion and miscarriage I shall use indiscriminately as indicating the expulsion of the ovum before the time of viability.

Sterility among the laboring classes in St. Louis is 21 per cent., varying in different groups 20.4 to 23.7 per cent.; in Boston 23.7 per cent., and 20 per cent. for all American born throughout the entire state, according to the Massachusetts census of 1898. My own records in private practice in St. Louis show 23.6 per cent. of native Americans barren and Americans of German parentage 26.3 per cent., an unusually high rate, which harmonizes, however, with the condition in Boston among Americans of Irish parentage, 27.2 per cent. An equally high sterility, in fact higher than among any other group, is attained by the college graduates, of whom comparatively few marry, and a large proportion of those who do marry are barren, 33.7 per cent. as reported in the investigation of 1885, and 20.5 per cent. in 1900, averaging 27.3 per cent. See Table 1.

My own records of Irish and German give only 17 per cent. among negroes, where invariably I find unfavorable functional conditions, 24 per cent. In Massachusetts 20.2 per cent. of Americans are childless, and only 13.3 per cent. of foreigners; Germans 11.2, French and Irish 11.6, English 14.4 and English-Canadians 19.5 per cent., closely approximating the American, which I have likewise found in all other functional relations, whilst the French-Canadians differ greatly, with a lower sterility and higher fecundity—in other words, with a more normal and healthy functional life.

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[1] Properly speaking, this should include all those whose sterility is intentional, due to means of prevention; but these can never be all ascertained, not even can we determine with certainty all those who have miscarried. The result depends entirely upon the confidence of patient in physician, and the physician's skill in securing the history.

Foreign records show a great variation from the lowest sterility in Norway, 2.5 per cent., and in one of the districts near Moscow, 2.8 per cent., to 27.3 per cent. in Paris, Lyons and Rouen, in some of the departments of France only 16.8; in Alsace, whose inhabitants differ functionally as well as racially with a later puberty, sterility is very low, being only 3.5 per cent.[2]

Greater luxury and wealth invariably go hand in hand with higher sterility. Mayer of Berlin finds 25.7 per cent. among the higher and middle classes, and only 15 per cent. among the laboring classes. Sir James Y. Simpson found 16.4 per cent. among British peeresses, only 9.6 per cent. among a similar number of English villagers, but among English college women and alumnæ it is 27.6 per cent.. as it is among their American sisters. In Austria 7.4 per cent. is given.

TABLE 2.—FECUNDITY AND MISCARRIAGE.

Observer.	Locality.	Class.	Number of married women.	Sterility. Per ct.	Fecundity. No. of children born to each marriage. Per ct.	No. of miscarriages to each married couple. Per ct	Total conceptions. Per ct.	Proportion of abortions to labor at term. Per ct.	Proportion of children born to the adult marriageable female. Per ct.
Americans.									
Engelmann, 1880-90.	St. Louis	Laboring class	648	20 4	2.08	.74	2 8	2 8	2 8
" 1890-92.	"	" "	804	21.2	2.1	.73	2.8	2 8	2.9
" 1880-90.	"	Higher class Americans, American parents	228	23.6	1.8	.65	2.5	2.5	2.77
"	"	Higher class Americans, German parents	114	26 3	1.9	.63	2 5	2.5	3 03
Chadwick	Boston	Laboring class, American-Irish parents	334	27 2	1.9	.63	2 5	2 5	3·06
"	"	Americans, American parents	874	23 2	1.7	.64	2 38	2 38	2.7
Wilbur	Michigan, 1894	All.	Census		1.8				
"	" " 1870-94.	"	"		2.1				
Wright	1885	College women	705	33.7	1.3				
Smith	1900	" "	343	20.5	1.8				
"	"	Non-college women.	313	15 7	2.1				
Irish.									
Engelmann	St. Louis	Laboring class	118	17 0	4.2	.96	5 1		4 3
Chadwick	Boston		754		3.0	.77	3 8		4 1
Wilbur	Michigan	Census			5.1				
Kuczynski	Massachusetts	"		11 7	3.2				
German.									
Engelmann	St. Louis	Laboring class	188	17 0	3.5	.95	4.4		3 6
Wilbur	Michigan	Census			6.7				
Kuczynski	Massachusetts	"		11 2	3.0				
Mayer	Berlin		5,195	17 2	3.2				
English.									
Chadwick	Boston	Laboring class	113		2.6	.84	3 5		3.3
Engelmann	St Louis	" "	51	41 0	2.5	1.13	3 7		2.1
Wilbur	Michigan	Census			4.5				
Kuczynski	Massachusetts	"		14 4	2.7				
Whitehead*	Manchester, 2000				4.34	.61	4 95		
Negro.									
Engelmann	St. Louis	Laboring class	197	24.3	1.9	.7	2 6		2.7

* These figures should be somewhat less, as they indicate the number of children and miscarriages to the childbearing women and not to all married women: the number of miscarriages seems too small; on the contrary, as I am convinced that correct answers were not given, and for these records we must rely on the veracity of the patient.

The number of the absolutely sterile is greater than that of the relatively sterile, that is, the number of those who have never conceived, natural or artificial causes preventing, is greater than that of those who have borne no full-term child, but admit having miscarried one or more times. This deserves attention because it is a condition never before investigated, and barely referred to even by Mathews Duncan in his well-known work on sterility and fecundity. He says that no observations exist; he himself believes the numbers too few to merit attention. My investigation shows that in this country this group of relatively sterile, or as they are erroneously termed by some, secondarily sterile, is over 8 per cent. of all married women; that is, 8 per cent. admit the fact; the actual number is undoubtedly larger, as some conceal the truth and others who are willing to admit have not distinguished between an early miscarriage and a free flow. In my dispensary practice the absolutely sterile are 11.6 per cent. and the relatively sterile 8.8 per cent., and this number remains about the same, whilst the number of the absolutely sterile varies far more in the different classes; among Irish and Germans the relatively sterile are only 6 and 6.5 per cent., with 11 and 10.5 per cent. for the absolutely sterile. The absolutely sterile I find to be about 12 per cent. among Americans, and this practically corresponds with the so-called "law of Simpson," that is, one sterile woman in eight and four-sevenths marriages, or 11 per cent.; but I am convinced that he had reference to all sterile, as he makes no such distinction, and the classification has never before been made; moreover, it corresponds with the total figures for sterility which he gives—16 per cent. for the higher and 9 for the lower classes.

It is evident that the extremes of sterility are reached in this country, although the rate does not exceed, in fact, does not quite come up to that of France, which in large cities is greater, in the country less.

Miscarriage.—Few estimates exist as to the frequency of abortion, but the generally accepted proportion has been that of 1 miscarriage to 5.5 labors at term. Hegar is often quoted with his estimate of one miscarriage in the earlier months to 10 labors at term, which is about the same. I find one miscarriage to 2.8 labors at term. a little more in private practice, most among the native American, 1 to 2.77, and somewhat less, 1 to 3.03, among the American of German parentage; less still among foreigners, among the Irish only one miscarriage to 4.3 labors and among the Germans 1 to 3.6. (See Table 2.)

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[2] This is the average of four years, 1872 to 1875, of 40,510 families in which either father or mother have died; hence, family life was cut short and many are noted as barren who in time might have borne children; on the other hand, these are the first years of German occupation during the option of migration, of which many availed themselves and these of course were in a great measure the more mobile childless families, so that an undue proportion of families with children remained; all in all the rate of sterility may be 1 per cent. or so below the correct average.

These figures are fully corroborated by the Boston records of Dr. Chadwick, who finds one miscarriage to 2.8 labors among all American-born in his dispensary, precisely as I do in St. Louis, namely, one miscarriage to 2.7 labors among Americans of American parentage and a trifle less, 1 to 3.06, among those of Irish parentage; among the Irish in Boston he finds 1 to 4. The actual number of abortions is 0.6 to 0.7 to each American-born wife and 0.96 for the Irish, 0.95 for the German, but the number of living children for foreigners is so much greater that the proportion of miscarriage to labors is reduced to less than it is among Americans.

Other available data I could discover none, save one German investigation which from 100 miscarriages deduces a proportion of one in 3.3 labors; this is likewise indicative of greater frequency than the accepted teaching of one miscarriage to 5.5 labors.[3] Although frequency of miscarriage is evidently greater in this country, it is not possible that it should be so much more frequent than it is in Europe; I am inclined to believe that the formerly accepted standard of 5.5:1 is vague and never was based on carefully studied facts, or that it is now antiquated and that the records of the higher classes in the larger cities of Europe would show a similar condition, yet I find but meager facts pro or contra.

We have found barrenness in the large cities of France greater than it is in this country, and I believe that the same would be true of miscarriage were the investigation to be made, but no data exist as to European conditions.

Fecundity.—Among the laboring classes in St. Louis I find 2.1 children to the married couple, and I here follow the universal custom of estimating the number of children to all marriages, i. e., to the number of married women, inclusive of the sterile, not only to the number of child-bearing women or mothers.

This is the highest fecundity which is found among the American born in this country (See Table 2), and I believe it due to the large admixture of the German element; it corresponds perfectly with the results found elsewhere; in Boston it is 1.7; in the state of Michigan in the last years 1.8, and for the twenty-five years from 1870 to 1895, it is 2.1, owing to the somewhat higher fecundity in the earlier years; it has there been slowly decreasing, as it has in every state in the Union. My private practice shows a fecundity of 1.7 among Americans of American parentage, less than in the dispensary, and a better condition, 1.9, among Americans of German parentage, precisely the same as among the Americans of Irish parentage in the Boston dispensary, whilst the Americans of American parentage there show 1.74, like the native American in St. Louis, a lower fecundity than anywhere recorded, unless it be in the French metropolis and among college women, English and American.

Very instructive and indicative are the observations made in regard to the effect on the reproductive function by one of the phases of modern female life, by overpressure in schools as shown in the study of fecundity among college graduates, by Carroll D. Wright, and later by one of their number, Professor Smith; there we find the very lowest fecundity, 1.3 and 1.8 (not 1.6 as Mrs. Smith figures it)[4] children to the marriage, an average of 1.6, which is corroborated by a similar group of women who have continued their studies longer, who have taken the advanced degrees, mostly Ph. D., with 1.6 and by English college women with 1.5. With this group of college graduates Mrs. Smith compares their relatives and friends of the same social class, whom she finds more prolific, with a higher fertility of 1.89 (really 2.1), which is precisely what we should expect from that class of American women, and harmonizes perfectly with the general average shown by my tables.

These figures clearly show the influence of college work and nerve exhaustion; among no group is fertility so low as among the college alumnæ; and this is corroborated by reports from England, where we find among female college graduates only 1.53 children to the marriage, whilst the average fertility of English women, as shown by the "Victorian Yearbook," is much greater, 4.2 children to the marriage. A comparison of these figures offers food for serious thought. The Michigan census and Boston dispensary give a trifle less than my own St. Louis records, but the same that I find among the higher class from which the group of sisters or non-college women is also taken.

TABLE 3. FECUNDITY IN THE AMERICAN COLONIES AND THE UNITED STATES IN THE 17TH AND 18TH CENTURIES.

Observer.	Locality.	Date.	Number of children to the married couple.	Number of marriages.
Engelmann. .	From genealogical records. . .	1600–1650	6.7	146
" . .	" " "	1650–1700	6.1	392
" . .	" " "	1700–1750	6.6	503
" . .	" " "	1750–1800	6.1	784
" . .	" " "	1800–1850	4.6	213
" . .	Portsmouth	1804–1811	4.27	
" . .	Hingham	1726–1779	4.32	521
" . .	Salem.	1727–1781	4.55	
Sadler.	United States	1750–1780	5.22	
"	New York State.	" "	5.22	
Holyoke. . . .	Hingham.	1782	4.5	Sickly year
" . . .	"	1783	4.6	Healthy year
Franklin. . . .	United States	. . . . .	8.0	Vague.

These facts very fully establish the low rate of fertility of the American woman at the beginning of the twentieth century. My genealogical records show that from 1600 to 1750, each marriage produced on the average at least 6 children, which, at the beginning of the nineteenth century, was reduced to 4.5, and these figures are corroborated from Salem by Dr. Holyoke, president of Harvard, and by Dr. Wigglesworth from Hingham, by a fertility of respectively 4.3 and 4.5 children to the marriage in the latter half of the eighteenth century.

Benjamin Franklin stated that "one and all considered, each married couple in this country produced 8 children." Whilst this is based upon no positive figures, the opinion of that great statesman is worthy of record, and it is to some extent corroborated when I state that the number of children given in my genealogical tables are only those who have reached maturity, so that the total number of children born must have been greater. Then again, it is well known that in the writings of Malthus, at the end of the last century, the great fecundity of the United States was used, together with that of China, as the basis for his theories of superfecundation, and in the table he gives the United States stands at the head of the list with a fecundity of 5.2, second only to New South Wales with 5.4 children to the marriage.

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[3] My records clearly show that all the old obstetrical standards are in need of revision. The hitherto accepted standards as to sterility and miscarriage may never have been based on extended statistical investigation, may never have been precise, and at the present day, for this country, they are certainly far from the truth.

[4] The figures given by the writer are incomparable as being the number of children living, after a lapse of years. The number of children born living—the essential result—is not calculated, but proves to be 1.8.

Surprising as may be to us, with the figures of the present at hand, the fecundity of the American colonies of the eighteenth century, yet this is not excessive, as it is exceeded at the present day by the French-Canadian with a fecundity of 9.2 (facts based upon the study of 1000 families, kindly placed at my disposal by Dr. Pellitier, secretary of the Board of Health of the Province of Quebec, 9.3 for the rural and 9.0 for the urban population, but this is the fecundity of the child-bearing woman, not the number of children to the marriage). Then we must remember that at present in a Russian district it is 7.2, and in Norway 5.8 children to the family.

Divorce.—I mention divorce, as it is correlated with sterility and closely connected with the moral causes of childlessness. It has increased in frequency, particularly of late years, in Europe 67 per cent. from 1876 to 1886. and in the United States 72.5 per cent.

For the United States the census of 1890 shows 540 divorces to 100,000 married couples, which is approximated only in Switzerland by 195, in France 80, Germany 77, Russia in Europe 11, England 8.6 and Canada 1.6 to 100,000 marriages.

TABLE 4. DIVORCE.

Country.	Period.	Number of divorces to 100,000 marriages.	Number of marriages to one divorce.
Quoted from Official Statements by Dr. Samuel W. Dike.			
Rhode Island	1899	12,200	8.2
Vermont	"	5,555	18.0
Massachusetts	"	5,347	18.7
From State and United States Census Returns.			
Michigan	1874	306	326
"	1894	418	240
United States	1880	203	490
" "	1890	540	185
Switzerland	—Mostly for 1885.	195	513
Denmark		184	543
France		80	1,250
Germany		77	1,300
Sweden-Norway		27	3,704
New South Wales		26	3,846
Russia in Europe		11	9,090
Italy		10.6	9,434
South Australia		10.4	9,615
United Kingdom		8.6	11,600
Canada		1.6	63,000

In Rhode Island for 1898, if I may rely upon so able and accurate an observer as the Rev. Samuel W. Dike, it is one in every 8.2 marriages, which would mean 12,500 divorces to the 100,000 married couples, and for Massachusetts in the same year, 1 to 18.7; startling figures when we recall that in 1880 Rhode Island, by the United States census, is recorded with 1 to 190, and Massachusetts with 1 to 566.

Throughout the state of Ohio there is one divorce to 20 marriages, and in the Western Reserve, those counties settled almost altogether from Connecticut, the conditions are much the same as in the home state, 1 to 11.8; and in Lake and Ashtabula counties, settled by New England farmers, it is respectively 1 to 7.4 and 1 to 8.5. whilst in Callio county, settled by Welchmen and Southerners, it is only 1 to 50.

I myself have made no investigation whatsoever in this direction, but present the figures of Dr. Nathan Allen, figures originally collected by Rev. Samuel W. Dike and referred to in the paper of Dr. Allen, in which he shows the deterioration of the New England family; even if we disregarded these figures, correct though they be, and accept the figures of the United States census, it is apparent how much worse conditions in the United States are than in any European country.

The census corroborates in reference to divorce the relative condition which I have shown to exist in the matter of fecundity and miscarriage between the American of American parentage and the American of foreign parentage, with an average rate of divorce throughout the country of 0.54 *per cent. of all marriages;* among native Americans it is highest, 0.61 per cent., less among Americans of foreign parentage 0.5 per cent., still lower among foreigners, 0.3 per cent., and highest among negroes, 0.67 per cent., precisely the relation which these groups bear to each other in sterility and in an inverse ratio in fecundity.

The causes of the excessive increase of sterility and its concomitants are both moral and physical. Figures I have none, but all the facts point in this direction; so the frequency of relative sterility, the sterility which admits of conception but terminates in miscarriage, seems to me strong proof that causes other than uterine disease prevail; so also the fact that sterility is greater as luxury and comfort increases; that fecundity is less and miscarriage more frequent.

The causes of divorce we know to be purely moral, and the fact that the relative frequency of divorce, miscarriage, sterility and fecundity among the native American, the American of foreign parentage, the foreigner and the negro are so nearly parallel, would indicate that similar causes influence each; the prevailing causes must be the same, and these must be of a moral nature.

That barrenness, in the large majority of instances, is independent of physical causes, seems to be conclusively proven by the astonishing increase of sterility in this country coincident with the progress of gynecology, and with the same giant strides which have marked the development of the very science which should control sterility were it due to disease and physical causes.

All facts here presented indicate the prevalence of moral causes; moreover, the studies of Goodell, Nathan Allen, Charles Fayette Taylor and Edward J. Ill force upon us the belief in the frequency of methods for the prevention of conception, that "too often the young wife enters the sacred bonds with the distinct understanding that she desires no offspring, and does so because of the inconvenience it would give her." As methods of prevention are common so is the resulting barrenness, moral or wilful, so are intentional abortions frequent which lead to the same result; and for this fact, too, I rely on the statements of those who have studied the subject.

A committee appointed by the American Medical Association in vain sought methods by which to stay the progress of criminal abortion, which clearly indicates that there are causes for sterility altogether too frequent that are not referable to malformation or disease of the reproductive organs.

Treatment.—However numerous may be those who willingly avoid conception, and who by early indiscretions have brought upon themselves a sterility they now deplore, there is still a certain number absolutely, or primarily, sterile who seek relief, and these are women who deserve the deepest sympathy of the man and the best skill of the physician; for not one of the many ailments of woman is so distressing as the misery of a barren, childless life to the true womanly woman; she must never be condemned to a hopeless existence, and above all, no treatment of the woman for sterility must be inaugurated until we are thoroughly satisfied that the husband is not at fault, as proven by an examination of the semen.

Male sterility has been too much ignored, and is far more prevalent than is generally accepted. The studies of Gross have placed it as one in every six barren marriages, 16 per cent., and it has been variously estimated by those who have studied the subject from 3 to 57 per cent.

A valuable study by Brothers of New York, which has recently appeared, based upon an examination of 72 men, estimates 1 sterile man in every 5 childless marriages, but from his own figures, and in this he agrees with me, I am more inclined to place it as 1 in 4. Accepting this with the fact that impregnation is known to take place under the most adverse circumstances, as I have seen it after the removal of both ovaries; one tube totally and one in part, with but a shred of ovarian tissue remaining, as it has been found in the abdominal cavity through a slight fistulous aperture after the uterus had been removed (Koeberle); also after removal of both ovaries, with ovarian tissue from another woman transplanted upon the broad ligament (Robert J. Morris),[5] and after fixation of a bit of healthy ovarian tissue in the uterus (Palmer Dudley), it is evident that the condition must be serious which prevents impregnation.

Physical causes of sterility can not well be determined with certainty; first one, then another, has been supposed to be mainly at fault; uterine displacements have been accused; then uterine catarrh, and now we know that salpingitis is a frequent cause. Atresia, the absolute closing of the canals, gonorrhea and salpingitis I take to be the most frequent causes of sterility, and in addition, those forms of endometritis which change the secretions and render them destructive to the spermatozoa.

Treatment of physical causes only is within the province of the gynecologist, and this means a correction of the various pathological conditions which may exist; as we must always remember before inaugurating treatment to establish the potency of the husband, so we must bear in mind that frequently general conditions are at fault, such as anemia, depression, mental or physical; a change of surroundings and climate may bring relief, but whatever the cause, our efforts must never flag in behalf of these unfortunate women, as many cases are recorded where even after long years of sterility a cure has been accomplished and conception resulted.

Not only is the physician called upon to treat the absolutely and primarily sterile, but he is liable to be consulted by those who later in life relent of the nefarious practices of their early married years, and he is then confronted with the pathologic conditions produced by artificial sterility, nervous and physical, local and general, neurasthenia, prostration, impaired functional activity of circulatory and digestive apparatus, with pelvic congestion, uterine and ovarian symptoms.

These cases are tedious and trying, but it is the duty of the physician to persist, not alone for the sake of the innocent sufferer, but equally for her who, suffering from self-inflicted sterility and its sequences, has relented of her selfish life of egotism, and with the best instincts of woman aroused now longs for the joys of motherhood.

Whilst the moral phases of the question do not concern the physician, it is yet his duty to point out to his patient the causes of her sterility and her suffering, and the broadest field is here presented for preventive gynecology.

Two and five-tenths per cent. is probably the normal proportion of barren marriages, for this is the condition existing among the simple, healthy, hard-working people in Norway and in the interior of Russia, and a small percentage of this number is due to the male, not 25 per cent. as in civilized and infected communities; in this country nearly ten times this number of marriages are barren and women childless. This must be due, in a large measure, to methods of prevention, i. e., to artificial controllable causes. If these can be eradicated, preventive gynecology will have accomplished far more than can ever be hoped for from its most splendid therapeutic or surgical achievements.

RESUME.

This investigation is based upon numbers which, as I have emphasized, may seem small to admit of deductions as to conditions existing throughout a great country, but I feel justified in doing so, as the data are exact and cases carefully sifted. In addition, all the facts presented are corroborated in various ways; some directly by independent observers; first and foremost by the census records of two great states, namely, by the census of Michigan and that of Massachusetts; by the Boston dispensary and the records of the college alumnæ; others indirectly by correlated facts, a corresponding decrease of fecundity and increase of miscarriage and divorce. Table 5 forcibly presents the conditions with which we are now confronted in this country.

TABLE 5. MEANS AND EXTREMES OF STERILITY, FECUNDITY, MISCARRIAGE AND DIVORCE.

	Generally accepted average.	Most favorable condition now existing.	American Colonies, 18th century.	United States at the close of the 19th century.
Sterility . . . . Per cent. of childless marriages.	11%	2.5% Norway. . . .	2%	Gen. average. 20% 23% College graduates, 25%.
Fecundity. . . . . Number of children to the marriage.	4.5:1 Europe .	7.5:1 Canadian French. 7.2:1 Kaluga department. 6.4:1 Christiania.	4.5—6:1	1.8 College graduates, 1.6.
Miscarriage . . . . . . Ratio of abortion to full-term labors.	1:5.5	. . . .	. . . . .	1:2.8
Divorce. . . . . Ratio of divorce to marriage.	. . . . .	1:63,000 Canada. 1:11,000 England.	. . . .	1:185 United States. 1:18.7 Massachusetts 1:8.2 Rhode Island.

Sterility is fully 21 per cent. among the laboring class of St. Louis, 20 per cent. throughout the state of Massachusetts, 23 per cent. among the better situated in St. Louis, the same in the city of Boston among the laboring class even; it increases with the increase of comfort and luxury, highest among college graduates, 33 per cent. (or 25 per cent. if we take the total average), higher among American born than among foreigners in this country. Especially is the difference marked in that large and hitherto entirely ignored class of relatively sterile women, those who have conceived but who never have carried a child to full term, which is from 9 to 12 per cent. among Americans and from 3 to 6 per cent. among foreigners.

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[5] For this I can not vouch: it is my recollection of a most remarkable case, but the authority is not in my hands.

Sterility has increased hand in hand with the much discussed decrease of fecundity; everywhere to some extent; in the United States it has increased to an excessive degree, just as fecundity has diminished more rapidly than in other countries. From a sterility of 2 per cent. in the eighteenth century, and a fecundity of five children to the marriage, conditions better than in any other country, and such as led to the Malthusian theory of super-fecundation, to the fear of over populating the earth's surface, after a lapse of one century, we have attained over 20 per cent., from first we have passed to last, and the other extreme is now presented—sterility greater and fecundity less than that of the women of any other nation, unless it be of France, where the question of the last decade has been one of most serious national importance.

These conditions, while not as yet menacing in any way the future of the country, as is at present the case in our sister republic, are sufficiently serious to indicate an imperative necessity for farther and more extended investigation.

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DISCUSSION.

Dr. J. M. Duff, Pittsburg—From my experience during the past two years I feel that I am more than ever qualified to repeat what I said at Columbus, that we are fast becoming a nation of accidents. In investigating this subject I have been astonished when I come to talk with women and have accumulated evidence. The number of children who are the result of accident is enormous. It has certainly been the experience of every one in general practice to be called by a woman who will tell you that she is very sorry that this happened at this particular time because they were not ready or could not support a child. Of course, there are many fathers and mothers who are anxious to have children, and there are many more who say they are. They all believe in the sixteen-day story and as a result there are more children born conceived sixteen days after menstruation than at any other time. Fathers and mothers should be prepared physically and mentally for the production of their offspring, and there should not be accidental results. This question may appear trifling to some, but it is one of the most important and most serious questions before the American people to-day.

Dr. William H. Wathen, Louisville—We find that the prevention of conception is common throughout this country and is not regarded, by even the most religious people, as an evil; hence, few children are born to a family. Again, it is almost universally believed by the laity that there is no moral or religious wrong committed by performing an abortion up to a certain time. When there is a desire to produce an abortion, a means will always be found to accomplish this result, and unfortunately a physician, who is in good standing in the community in which he is living, will sometimes lend himself to that purpose. It is important to impress upon the laity that an abortion at the end of the first month is just as criminal as an abortion at the end of the fifth month, because if there is ever any spirituality in the child it must be at the beginning. Induced abortion is a moral, religious and physical evil. Induced abortions are followed by diseases much more severe than if they occurred naturally.

Dr. A. McDermid, Chicago—The field of operative obstetrics and gynecology is exceedingly attractive to all of us, but that a man should devote his time and attention to the subject in hand is beyond all praise. This work is of value not only to the profession, but to the laity and the state. I am proud of the statistics of my native country. I would ask you to take up the leading journals of the large cities of Canada and see whether you find in their advertising columns that class of advertisements which you find in the leading, respectable journals of the great cities of this country. In the matter of abortion, it occurs to me that the profession has a great work to perform in directing those who come under their care. I recall two instances of young married women who were both frantic when they found themselves pregnant shortly after marriage. By talking to them kindly and by showing them the terrible results following abortion, I succeeded in keeping them from doing anything rash. They are now enthusiastic over the prospect of maternity.

Dr. E. D. Ferguson, Troy, N. Y.—The essayist has put this subject forth in all prominence, but he has said nothing specific as to causation and nothing as to what can be done. National investigations may go on indefinitely; we may talk of the matter here, but there is no way of getting at it except through the 100,000 medical men of this country who will carry their own individual teaching into their own parochial work. The social conditions which have arisen during the century of our existence have made possible the thing which now exists. Our forefathers were not familiar with condums and other things resorted to for that worst of all vices, marital fornication. Neither were there in those days so many instances of double epididymitis. It is not the woman who is always at fault, nor is it a fact that women have graduated from schools of learning that has made them sterile. I do not believe that for one moment. It may be the case in statistics, but it is not in fact. Very likely a double epididymitis of the consort may have been the cause. Each one of you should consider himself a mentor and give out the warning words and point out the proper thing to be done. Every one of us can recall instances in which we have been confided in that the menstrual period had stopped soon after marriage and that we should do something to bring it about. We have then the golden opportunity, but only by our own efforts can we stem the tide of vile publications that appear as advertisements in our newspapers. It must be missionary work done by the physicians of this country and carried into the homes of their families.

Dr. M. F. Porter, Fort Wayne, Ind.—I agree with Dr. Ferguson when he says that it is not because these girls have graduated from Vassar that they are sterile, but that it is in large part the result of an epididymitis. Men contaminate their wives and make them sterile because, unfortunately, instead of becoming impotent they render their wives sterile through infection of the tubes. I believe that this is largely due to the current belief that an ordinary urethral infection in a young man amounts to nothing. Take gonorrhea out of this country and you have robbed the abdominal surgeons of their vocations. We should talk about the fitness of men with a chronic gonorrhea to marry, rather than the fitness of men who have syphilis. The syphilitic men are not killing our women, nor are they increasing the number of divorces; they are not depopulating our country nor making invalids of our daughters to one-half the extent that the men are doing who are the subjects of chronic gonorrhea.

Dr. George N. Jack, Depew, N. Y.—We ought to understand this subject better than we do. As a matter of fact our courses of education are not what they should be. We see evolution being taught in our schools, and we see religion in the decline. New principles are advancing to take the place of it. All people are sustained by a selfish purpose. It is my custom when patients come to me and tell me their troubles, to try and convince them that it is to their own selfish interest to bring forth children. I advance an argument, after which very few of them apply to me for assistance a second time. The matter is not so difficult of control if physicians will take the time and trouble to talk quietly and convincingly to their patients.

Dr. Hannah M. Graham, Indianapolis—The abuse of the physiological law of creation, as his statistics have well shown, weakens morality, murders the unborn, and makes physical wrecks of its followers. I recognize the fact that I am not a voter, but I speak to a body of men, each of whom enjoy the privilege of stamping the law with their individual approval or disapproval, and the question of who shall and who shall not marry has been discussed in our land until you are all familiar with the various objections given.

Dr. M. K. McCoy, Duluth, Minn.—I am very glad that the fault has not all been cast upon the women. However, the women of America have no encouragement to become mothers. What protection has she or her children? Confronting gonorrhea, the saloon on one side, the brothel on the other, and back of it all the abortionist, it is a wonder that any children are born. It is time that the protection of the family and the woman should be considered. The college graduates should not be held responsible for the decreasing family. In many instances these women also have dependent mothers, brothers and sisters, and they can not take upon themselves married life with its accompanying duties.

Dr. Englemann, in reply—It has been correctly stated that nothing was said in regard to the cause of these conditions. Neither did I say anything of the treatment; this was for want of time. The idea has been correctly expressed, as I myself put it, that the treatment is in the hands of every one of us; it is the influence the physician exerts, or should exert, in the home. I have endeavored to show that the causes of sterility and childlessness are moral causes. By far the largest percentage is statistically proven to be due to moral causes. Some few physical causes exist, such as atresia, endometritis, especially that due to a germ of some kind. However, they are not many. That endometritis is the cause of absolute sterility is shown by the breeder; abortion in animals occurs in some 12 per cent. of all cases; 5 per cent. in well-kept herds, but sometimes epidemics of abortion occur of such violence that the breeders speak of an abortion germ which is very likely nothing more than a streptococcus. It is an endometritis which leads to abortion in animals and at all the experiment stations antisepsis is now being practiced. They are guarding against abortion by antiseptic precautions. Inflammation of the mucous membranes is a common cause of sterility in the human being.

It has been rightly said that the male is at fault in a great many cases, but to arrive at a fair estimate of barrenness I believe that we may accept as a normal status in a healthy people the showing made in Russia and Norway where artificial means do not cause sterility, and there is childlessness in only 2 or 3 per cent., of which probably 5 per cent. is due to the male. That sterility of the male is far more common than is generally accepted has been shown in a very admirable manner by Dr. Brothers, of New York; it is so frequent that I must emphasize this precaution. Before treating the woman who comes to you because of sterility, examine carefully the male. It has also been rightly said that if the proper care were taken and an honest course pursued, there would be very little gynecology. The proper advising and guiding of these mothers in health will do more to help women than all gynecology and surgery. Sterility has gone from worse to worse in the face of gynecologic progress. To this astonishing fact I neglected to call your attention, and you may well ponder on the increase of sterility in the face of progress and development of gynecology, showing that sterility has practically nothing to do with physical causes. There are few physical causes; the main causes are moral; therefore, the treatment does not fall strictly within the sphere of the gynecologist. You may rightly ask why I bring this matter before this Section; it is because I do not know where to place it, and in a measure it is gynecological because it deals with pathological conditions of women.

Conception takes place so easily and under the most adverse circumstances that the physical causes which prevent conception must be serious indeed. Women will conceive when there is only a bit of ovarian tissue left, even when the uterus is removed, as in the case of Koeberle; impregnation took place and the ovum developed in the abdomen.

The interesting remarks of Dr. Duff are in the line which must be followed. He clearly pointed out the efforts made to prevent conception with that sixteen-day story, and it would be well to bring prominently before the profession the fact he imparts, i. e., that the mass of children are conceived after that time—after the sixteen days from the cessation of the menses. It is true that the majority of conceptions are mistakes. This is an important subject, for the lack of fertility has invariably been the precursor of national decline.

THE MORTALITY OF APPENDICITIS.*

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During the year 1900 there were operated upon at the German Hospital, Philadelphia, 268 cases of appendicitis, of which number 144 were acute attacks of the disease and 124 were chronic. Of those operated upon during the acute stage of the disease, 26, or 17.8 per cent., died, either from the disease or from some intercurrent trouble arising during the illness, or, existing prior to the time of operation. One of the patients who had diabetes mellitus, and in whom the existing abscess was simply drained under local anesthesia, died of diabetic coma three days after operation. Another case had advanced phthisis at the time of the operation and died of peritonitis. Still another case developed a post-operative pneumonia, from which he died on the second day following operation. If we deduct these three cases, the mortality of this series of cases is 15.9 per cent. for acute appendicitis without intercurrent disease.

In the 26 fatal cases the following conditions were noted:

Seven cases had general purulent peritonitis at the time of operation. In 7 others a general purulent peritonitis occurred subsequent to operation; in 8 cases septicemia was the cause of death; 1 case died of shock, and 1 died of shock following a second operation for the relief of an intestinal obstruction due to bands of adhesions. The remaining 2 were the cases of phthisis and diabetes referred to above.

In the 7 cases of post-operative peritonitis the appendix was removed in every instance. In 3 of the cases the appendix was post-cecal, and, by its removal, an unsuspected collection of pus was discovered. In 1 other the appendix occupied the center of a collection of pus and was complicated by a gangrenous cecum. In another the appendix was behind and to the outer side of the cecum, and lay in a mass of infected exudate, and there was also an abscess in the muscular layers of the abdominal walls. In the sixth case an abscess was encountered immediately on opening the abdomen, the contents of which escaped, both externally and into the general peritoneal cavity, before anything could be done to arrest it. In the seventh case the appendix lay to the cecal side of the abscess wall and was not a portion of it. This was the phthisical case, and death was due to septic peritonitis.

The time which had elapsed between the onset of attack and the time of operation was as follows: In 7 cases with purulent peritonitis at time of operation, in Case 1, it was less than 12 hours; in Case 7, 20 hours; in Case 18, 24 hours; in Case 15, 2½ days; in Case 5, 3 days, in Case 9, 10 days; in Case 16, 21 days.

In 7 cases of post-operative peritonitis it appeared as follows: Case 21, 24 hours; Case 13, 5 days; Case 20, 7 days; Case 25, 8 days; Case 8, 14 days; Case 27, 50 days; Case 10, not noted.

In 8 cases of septicemia it was as follows: Case 12, 2 days; Case 2, 2 days; Case 9, 7 days; Case 23, 10 days; Case 19, 10 days; Case 4, 14 days; Case 3, 17 days, and Case 22, 49 days.

Shock was observed in Case 17. There was no history, but there was found an intraligamentary cyst, cystic ovaries and numerous inflammatory cysts. Intestinal obstruction occurred in Case 24 in 24 hours.

As regards the number of attacks, they were as follows: It was the first attack in 13 cases; the second attack in 5 cases; fourth in 2 cases; sixth in 1 case, and it was not noted in 6 cases.

The character and severity of the attack was shown, with classical symptoms, to be severe in 20 cases, and with classical symptoms, to be mild in 6. It was not noted in 1.

The position of the appendix and its relation to other organs was as follows: Post-cecal, in 12 cases; in or toward pelvis, 12; toward spleen, 1; not noted in 1, and not looked for in 1.

The complicating diseases were: Diabetes, 1 case; phthisis, 1; pneumonia, 1; ovarian cyst, 1, and intraligamentary cyst, 1. Nearly every case showed evidence of nephritis after operation, except the case operated under local anesthesia.

The extent of the inflammatory process in appendix was as follows: Intense inflammation in 7 cases; gangrenous in 10; perforation in 3; gangrene and perforation in 5; chronic inflammation in 1, and not sought for in 1.

Secondary collections of pus were encountered in 11 cases; 7 in the pelvis, 3 post-cecal, 1 to the median-line side of right iliac fossa, and 1 in the abdominal walls.

Gangrene of the cecum and colon was encountered in 7 cases. In 5 it existed at the time of operation, and in 2 cases it developed subsequently. It is probable, however, that the damage to the bowel had occurred before the abdomen was opened.

The one death in chronic appendicitis was in a case where an ovarian cyst, which was adherent to the appendix, complicated the appendiceal operation. In addition to the ovarian cyst there were numerous inflammatory cysts. The patient did well until the third day, when the drainage tube was removed, after which she promptly developed a septic peritonitis and died on the sixth day following the operation. Whether the sepsis was introduced from without at this time or whether a latent sepsis in the peritoneal cavity was liberated by the manipulation is a matter of surmise. Yet it is the opinion of the authors that this was a case of post-operative infection.

The fatal cases of appendicitis that I have reported do not by any means cover the subject of the mortality of appendicitis. In consequence of this I will digress a little from these cases for a short discussion of the

MORTALITY IN GENERAL.

In the cases not subjected to surgical treatment, by far the largest factor is septic peritonitis. This arises in one of several ways: 1, transmigration of micro-organisms from an ulcerative or interstitial appendicitis, without rupture of the appendix; 2, gangrenous appendicitis or rupture of the appendix by ulceration, without peritoneal adhesions localizing the septic area, and 3, internal rupture of a peri-appendiceal abscess.

Another quite common termination is an obstruction of the bowel, either by adhesions of the appendix to neighboring small intestines, or by the bands of adhesions thrown out in nature's efforts to localize a septic area.

The factors mentioned above are responsible for by far the greater number of deaths in non-operative cases of appendicitis. Yet there are other complications that are seen quite frequently, for instance, the deposit of septic material in distant parts of the body, as the liver, lungs, brain, heart, etc.

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Rarely an abscess rupturing into the bladder will causes a fatal cystitis or pyelitis. In regard to the number of attacks, it is to be remembered that the fatal attack may be the solitary severe one, and during it the proper diagnosis is made for the first time. Severe attacks without fatal issue subside to varying degrees, but commonly render the internal symptoms more aggravated.

As we are firm believers in the operative treatment of this affection, our main interest is in the causes of a fatal termination in those cases submitted to surgical treatment. In cases of chronic appendicitis without adhesions, or in acute cases operated during the attack in which the lesions do not spread beyond the peritoneal coat of the appendix, the mortality is confined entirely to those causes that are inseparable from any celiotomy. Septic peritonitis due to errors of aseptic technique, hemorrhage from the slipping of ligatures, nephritis and pneumonia coming on during convalescence, and the unavoidable dangers of anesthesia.

In those cases complicated with adhesions, but without septic infections, the mortality is also very low, yet there are certain operative factors that greatly increase the mortality in these cases over the class just described. The necessity of a large incision, greater liability to hemorrhage from the adhesions, and the danger of tearing the peritoneal coat from the bowel in freeing adhesions, which latter accident is very likely to result in a fatal necrosis of the bowel, all add to the gravity of the operation. In addition, in a certain proportion of these cases, gauze must be packed into the bed of the appendix to control hemorrhage not accessible to ligature, thus adding to the case the dangers connected with gauze drainage. The principal dangers are, infection from without carried to the peritoneal cavity along the gauze, and obstruction of the bowels, either by the disposition of the gauze, or by the adhesions necessarily remaining after its removal.

In the series of cases reported, there is one death belonging to this class of cases. This case was complicated with an ovarian cyst and has been discussed above.

The two classes of cases described above comprise those in which the operation of election was done, and in which the mortality is very low. Of these cases, 124 were operated upon at the German Hospital in 1900, with only one death, or 8 per cent. Contrasting this record with those operated upon in the presence of pus or gangrene, of which there were 144, with 26 deaths, the grounds for my belief in the early operation are clearly seen.

There is one class of cases of appendicitis, however, in which, in the great majority, a lethal termination is reached in spite of any plan of treatment. These cases can be appropriately called fulminating. Several of the fatal cases reported illustrate this type. In them, operation even in the first hours, is too often unavailing, as the first symptoms are those of general purulent peritonitis. In one case of this series, I operated twelve hours after the onset of the attack and found an advanced general purulent peritonitis, a condition from which I have never seen a recovery.

Many cases are reported in the literature as recoveries from general purulent peritonitis, but from my experience I am led to think that there was probably some error in the diagnosis, and that the cases were probably a very extensive, but nevertheless localized peritonitis. In cases in which the first attack is of this type, it is hard to see how a fatal termination can be avoided, but if there have been other attacks previous to the fulminating one, some one is responsible.

In cases of appendicitis with localized collections of pus, the success of the operation to a great measure depends on our success in emptying and thoroughly draining every pocket of pus. Merely opening and draining the main abscess will not do, for there are frequently secondary collections of pus in the pelvis, or among the small bowels, which, if left unevacuated, will render our operation unavailing. The great problem in this operation is how to drain all these collections without infecting the general peritoneal cavity. Irrigation is a frequent cause of this and should only be used with the greatest caution.

Of the four main localities of appendiceal abscesses, that situated to the outside of the cecum gives, perhaps, the most favorable prognosis, as we can keep to the outer side of the general peritoneal cavity, and, by a counter opening in the loin space, secure free drainage. The next most favorable variety is that situated anterior to the cecum and directly under the abdominal wall. Next in order comes collections of pus in the pelvis, and then, most dangerous of all, local collections, one to the median line side whose walls are made up principally by small intestines. Post-cecal collections of pus offer a serious problem to the operator, for it is in this locality that we have post-peritoneal infection and necrosis of the bowel. If the pus be not localized, but free in the peritoneal cavity, there is no hope of recovery, unless perhaps by operation in the first hour or two, when only the serum is infected and peritonitis has not actually begun. The reason for the varying degrees of danger in the different varieties of appendiceal abscesses, lies in their adaptability to evacuation without contamination of the general peritoneal cavity.

The advisability of removing the appendix in the presence of pus has been the subject of much discussion. In the opinion of the author the appendix should be removed except under very exceptional circumstances, for by so doing we render less likely the following possibilities, which are active factors in appendiceal mortality: Fecal fistula; an undiscovered secondary collection of pus; subsequent attacks of the disease, and the danger of subsequent necrosis and obstruction of the bowel. With these objects to be attained and with the surety of freedom from spread of infection by the use of a proper technique, it seems advisable to remove the organ. There are, however, a few cases in which from the depressed condition of the patient we must be content with draining the abscess, leaving the removal of the appendix to a subsequent operation.

Another very common cause of death in these cases is necrosis of the bowel, probably due to septic emboli in the veins of the mesentery, or pressure from the plastic exudates. Metastatic abscesses, septic endocarditis and obstruction of the bowel also account for the death of some of these cases.

Ether for some unexplained reason is especially badly borne by these patients and adds greatly to the anxiety of the operator.

In the 118 cases operated upon during the acute stage of the disease and followed by recovery, it is interesting to note the following facts: In 61 cases pus was present. Of this number, the appendix was perforated and gangrenous in 21 cases; 2 cases had perforation without gangrene; in 25 cases, infection occurred by migration of micro-organisms through the walls of the appendix, and in 13 cases the records fail to show the condition of the appendix. In the remaining 57 cases, the inflammation was confined to the appendix. In 6 cases there occurred fecal fistulæ, 4 of which closed spontaneously, 2 requiring a subsequent operation. There were 56 cases operated upon in the first attack, and in the remaining 62 cases there was an average of 4 attacks.

During the year there were in the hospital 11 cases of acute appendicitis that were not operated upon, 3 of these died. Of the remaining 8, who refused operation, 5 left with a mass in the right iliac fossa, and in 3 the lesions were apparently confined to the appendix.

One thing seems certain, one attack predisposes to other attacks, and, barring the rare cases of obliterating appendicitis, each attack renders the operation more difficult on account of adhesions, *their multiplication and* tendency to denseness and contraction, thus detracting from a favorable prognosis. It is very common, however, to elicit by careful questioning a history of attacks of abdominal pain, which at the time of their occurrence were ascribed to other causes, e. g., bellyache, cholera morbus, "bilious attacks," typhoid fever, cholecystitis, nephritic colic, neuralgia of the stomach or bowel, or to entero-colitis, hepatic colic, etc. In giving a prognosis the possibilities of these being appendiceal in origin *must be taken into consideration.*

The character and severity of attacks is of great moment and must be duly considered in the question of appendiceal mortality. Certain cases begin with an attack, which, from its incipiency, is of the greatest severity, both as to symptoms and pathologic changes as well. These cases are known as the fulminating variety, and the destructive changes in the appendix take place in a few hours. I have operated within twelve hours after the onset of the first attack and have found a gangrenous and perforated appendix, with abscess and gangrene of the cecum, *as shown by Case 1.*

In another patient, Case 21, operated upon within twenty-four hours after the onset of the sixth attack, we found the appendix gangrenous, perforated and bound up in a mass of dense adhesions which involved the cecum, small intestine and parietal peritoneum. This patient died of general purulent peritonitis sixty hours after operation.

In still another, Case 7, which was operated upon twenty hours after the onset, we found a gangrenous, perforated appendix with forming adhesions and general purulent *peritonitis. Here nature was attempting* to protect the peritoneum, but was too slow to encompass the ravages of the diseased process in the appendix.

I might go on and report many cases of this frightfully-rapid type of the disease, where even the earliest operative procedure may be of little avail. Where this has occurred in the first recognized attack, it is difficult to see how matters can be mended, but where it arises in an attack after the original one, some one is at fault, for many such deaths could have been prevented by operation at an expedient time.

In most fatal cases which can not be classed as fulminating, the attacks are of varying severity, although many of them are severe and progressive. However, one must be on the watch for those cases, mild as far as symptoms indicate, but in which, nevertheless, the pathologic changes are progressively destructive. Such a case was found in A. H., who was operated on in the second week of her first attack. The appendix was gangrenous, and, together with the cecum and small intestine, formed the abscess cavity wall. In this case the pelvis was full of pus, and she died of septic peritonitis.

It has been my experience that recurrent attacks of appendicitis are generally progressive in severity, each one adding fuel to the flame. Adhesions grow more numerous and dense. The blood supply of the adherent organs becomes altered. Post-operative necrosis is rendered more probable, and the stripping off of the peritoneal coat of the cecum or bowel is aided, thus favoring post-operative necrosis of the intestine.

POSITION OF APPENDIX.

Its position and relation to other intra-abdominal organs, as illustrated in this series of cases, is as follows: In 12 cases the appendix was found behind the cecum; in 12 others it occupied a position pointing toward the pelvis; in 1 toward the spleen; in 1 the position was not noted, and in the other the organ was not looked for. This series would seem to point to an equal division of severity so far as the position goes, but nevertheless an appendix pointing toward the pelvis is rather more favorably located than one behind the cecum.

The position of the appendix is of the utmost importance in a conideration of the subject before us. An appendix which *occupies a position behind the cecum.* pointing upward toward the liver, is a favorable locality for fatal attacks of appendicitis. An acute inflammation of an appendix in this position favors post-peritoneal infection, either by the route of the lymphatic or venous circulation. Collections of pus dissect up the posterior layer of the peritoneum; by the burrowing pus, the blood supply of the cecum is interfered with, and necrosis of the gut is apt to follow. This location of a septic collection favors abscess of the liver, a condition, however, which is rarely met with as a complication of appendicitis. Then, too, in this class of cases septicemiæ plays an important rôle.

The appendix, holding a position in the pelvis or in the direction of the pelvis, offers a slightly better prog*nosis than when it is behind the cecum.* This is, however, far from being a favorable locality; for in a fair percentage of the fatal cases the appendix occupies this position and the pelvis contains a large amount of pus.

In the female, a collection of pus in the pelvis is not only unfavorable to the life of the patient, but the disastrous effects upon the uterine adnexa are marked even in those cases which recover, and such patients are condemned to lives of invalidism. Pyosalpinx, uterine and bladder adhesion, and adhesions between the uterus and sigmoid or rectum, are common events in this class of cases.

In the male a sloughing of the pelvic fascia is not uncommonly met with, and is a condition of great seriousness, not only as to life, but also as to the health of *the patient who does not succumb* in the acute stage of the disease.

In connection with the subject of the locality of the appendix, a point which has been very forcibly brought to my notice is the frequency with which collections of pus have been found in the pelvis. I make it a routine practice to pass a glass drainage tube into the pelvis in every acute case of appendicitis, and have with astonishing frequency discovered pus.

When the appendix points toward the spleen, general peritonitis is of common occurrence, and this position must therefore be considered a dangerous one. It is with this direction of the appendix that secondary abscesses occupying an area to the median line side of the right iliac fossa so commonly occur and are frequently overlooked. Other positions, such as in the ileo-cecal, ileo-colic or sub-cecal fossa, are associated with destructive phenomena.

DISEASES COMPLICATING.

Diabetes as an associated trouble enters into the consideration of our subject, for recently I had a case of an acute attack where the abscess was opened under local anesthesia, but the patient succumbed to diabetic coma.

Nephritis is far more common, and its relationship and true value as a factor is not as entirely established as one would wish or could expect. Nearly all my cases, both the fatal ones and those which recover, show albumin and hyaline and granular casts after operation. Is this due to the ether? In those which recover, the symptoms of the nephritis gradually subside without any evidence of permanent injury to the kidneys. It does seem probable, however, that, other things duly considered, in the fatal cases the nephritic condition must play an important part in lowering the patient's resistance by the retention of constitutional poisons and the alteration of the blood pressure.

A septic condition of the heart and its membranes is a serious complication and is invariably fatal. Endocarditis is not uncommon, and although the fatal issue may be deferred, it is none the less sure. The same can be said of myocarditis and pericarditis.

Septic pneumonias are common, but not necessarily fatal, as a fair percentage of these cases do get well. It is, however, a serious matter, and may determine the end.

Appendicitis in a phthisical patient offers a problem which is difficult of solution. I operate on them when pus is present, but only as a last resource, and then do as little surgery as will meet the indications.

Infection of the appendix by the typhoid bacillus is far more common than is usually accepted by our medical brothers. The active stage of the enteric fever does not, *per se,* offer a contra-indication to operation in the presence of acute suppurative appendiceal disease. I have on several occasions operated under these circumstances with a happy result.

TIME BETWEEN ONSET AND OPERATION.

This brings up the often-debated point as to the time for operation, and I would like to state here, with all the emphasis at my command, that delay in operation is responsible for more deaths in appendicitis than are all the other factors which have to do with the disease. Barring some cases of the fulminating variety, where nothing that man can do avails, there are no cases which, if operated upon within the early hours (preferably the first 12 hours, and at the latest 18 to 24 hours), that can not be saved, not only to live useful lives, but to live them minus fecal fistulæ, tugging adhesions, danger of intestinal obstruction, and chronic or subchronic invalidism. Also allow me to emphasize the ever-increasing difficulties of operation with a directly corresponding decrease of a favorable prognosis, which attends each succeeding attack of appendicitis. I am sure that those of you who are constantly seeing and meeting this disease in its various phases will agree that early operation stands without a peer as the method of choice.

EXTENT OF INFLAMMATION.

The various degrees of inflammation are all attended with a mortality; the acute catarrhal being the lowest in the scale. Interstitial appendicitis is very commonly attended with peri-appendicular infection from migration of organisms through the diseased walls, and has a higher percentage of mortality than the catarrhal. Gangrenous and perforative conditions, which can be properly classed together, are attended with the largest death rate of all varieties of appendicitis. There we have a direct outpouring of the highly septic contents of the organ into the surrounding tissues, which, from the inflammatory process set up by nature to protect it against the coming invasion, has become a fertile soil for the growth of the infecting organisms.

The location of the perforation and the relation it bears to surrounding tissues and organs is a very important point. An appendix pointing into the pelvis which perforates at its tip will offer a better chance for localization of the subsequent abscess to the pelvis and insure a better prognosis than if the perforation takes place at or near the proximal end, for here the chances of general peritoneal infection are increased.

An appendix situated behind the cecum, pointing toward the liver, will be followed by serious results, no matter where the perforation occurs, although a perforation at the distal end will increase the danger on account of the proximity of the liver and kidney. A perforation at the base of an appendix located behind the cecum, and particularly if it be on the posterior wall, will favor retroperitoneal infection.

It may be laid down as an axiom that the danger of death in acute appendicitis increases in direct ratio to the area of peritoneum involved in the septic process.

When the process is limited to the right iliac fossa, the lowest percentage of mortality is accomplished with the spread of the septic process to the pelvis, and thence becoming diffused, we have an ever-increasing fatality until we arrive at the infection of the general peritoneum, when the apex of the scale of mortality is reached. I can say truthfully that I have never seen a patient recover in which the general peritoneal cavity was infected throughout its entirety.

With all due deference to my professional brethren who report cures of general septic peritonitis, I must nevertheless say that their cases were extensive, no doubt, but just as surely were they cases of localized infection in which there remained some healthy, uninfected peritoneum.

ANESTHESIA.

This plays but a minor part in the mortality of the cases upon which this paper is based. Ether is used almost invariably and we have had but few accidents, and rarely a death which could be ascribed to the anesthetic. We have used spinal cocainization, but do not see that it offers any advantages or decreased risks over ether narcosis and it has certain decided objections. It does not secure muscular relaxation and therefore interferes with the operator and increases the risk of infection by the forcing of a knuckle of gut into the area of infection.

Occasionally a patient will inspire mucus, calling for tracheotomy, and this may be followed by an inspiration pneumonia. These accidents are to be laid to the condition of the patient rather than to the anesthetic. A patient with a septic condition in his abdomen will frequently take ether very badly and have respiratory failure or clogging of the trachea and larynx with mucus.

DIFFICULT CONDITIONS.

The position of the appendix, as has been said, in its relationship to contiguous organs, influences the difficulties of operation and the prognosis. It is far more difficult to remove an appendix which forms part of the wall of the abscess cavity or infected area, or one which is behind the cecum, than one which springs into view as soon as the peritoneum is opened, and undoubtedly the removal of an appendix under such circumstances increases the risk unless it is performed by one whose technique is highly developed, and who fully realizes the dangers to the patient. I believe, and to my own satisfaction have demonstrated, that the removal of the appendix, except in rare instances, will give the lowest percentage of mortality.

Adhesions always mean increased operative difficulties and both directly and indirectly are responsible for appendiceal mortality. Directly, by the danger of desseminating infection, by the concealment of secondary collections of pus, and by hemorrhage; and indirectly, by intestinal obstruction, by stripping off of the serous coat of the bowel and subsequent necrosis, and by tearing the mesentery with the same result. And yet adhesions are of use to those unfortunates who are denied, by their own or their physician's prejudices, the benefits of early operation. The post-operative pains of patients who have had abdominal adhesions are so common that one dreads to meet with them at the time of operation. The pain is due to tugging and pressure on the adherent organs.

Perforation of the appendix is not necessarily a fatal accident, yet it is of common occurrence in fatal cases. As has been said, the danger of perforation lies in the locality of the perforation and its relation to the position of the appendix. When perforation occurs in the early hours of an attack, before the confining wall of lymph has become sufficiently organized to protect the peritoneum, the danger of a fatal peritonitis is increased. Perforation is always indicative of an extensive pathologic change, those leading to the rupture and those which follow as a result of the free outflow of infectious material. What has been said of the perforative type is to a great extent true of the gangrenous, for the two are usually found to co-exist. It is in these two varieties that the secondary septic complications arise that are responsible for so many deaths.

There are the following five varieties of appendiceal abscess dependent upon the location of the collection:

1. This is the most common in my experience, and is the one in which the collection is located post-cecal, or between the layers of the ascending meso-colon. This variety is attended by a high rate of mortality. Here it is that we find post-peritoneal infection, lymphadenitis, phlebitis and pyelo-phlebitis. I have come to dread the consequences of this last variety of abscess on account of the tendency to gangrene of the cecum and colon, as a result of the disturbance of the circulation of the bowel by the dissecting process of the pus, to pressure necrosis and to septic thrombosis of the mesenteric arteries. This has occurred in a large percentage of my fatal cases of post-cecal abscess. The gangrenous condition of the bowel may occur prior to and subsequent to the time of operation, coming on as late as two or four days after operation; and when it does occur is apt to be rapidly fatal.

2. This variety is that in which the collection is immediately beneath the parietal peritoneum, being confined by the cecum, coils of small intestine, the omentum, the appendix, parietal peritoneum and masses of inflammatory lymph. In this variety the mortality is much lower than in the previous one, for the general peritoneum and lymph channels are shut off from infection. It is here that the question of the removal of the appendix comes up. Every case must be judged by itself, and a procedure decided upon which will best suit the case in point. However, in the vast majority of these cases the appendix can be and should be removed. Simply draining the abscess will allow your patient to recover from that particular attack, but does not offer a cure of the disease, for the likelihood of recurrence is not removed, and with each subsequent return the difficulties of operation and the dangers of an unsuccessful termination are distinctly increased.

In the cases of several of my patients who died of peritonitis subsequent to removal of the appendix, under the above-mentioned circumstances, the infection may have occurred as a result of this procedure. Nevertheless, more cases will get permanently well by removal of the appendix than would do so by allowing the gangrenous and perforated mass to remain.

3. In this variety the collection occupies the pelvis, and it is very common. It is, however, frequently unsuspected and undiscovered. Of all the varieties of appendiceal abscess, this is the most favorable for recovery, although it is frequently attended by involvement of the pelvic organs, especially in the female. The favorable prognosis of this variety is due to the isolation of the pus, owing to the dependent position of the pelvic collection.

4. This variety in which the collection is located near the median line of the abdomen and to the median line of the cecum renders a fatal issue exceedingly likely. It is this variety that is most apt to be associated with secondary collections. The difficulty of treating such an abscess, without infecting the general peritoneum, is extreme and frequently impossible.

5. Here the collection is free in the general peritoneal cavity, and in this variety the cases are practically all fatal unless operated upon very early.

Case. 1.—W. C., aged 21 years, single; American; machinist. Admitted July 4, 1900.

Not feeling well for two days before admission. Complained of diarrhea and slight pain in abdomen. Twelve hours before admission was taken suddenly ill with severe pains in abdomen, vomiting several times. On admission abdomen distended, tympanitic and exquisitely tender. No movement of bowels or passage of flatus for 12 hours. Pulse wiry, rapid.

Operation immediately after admission: incision about four inches long, through right rectus muscle; as soon as the peritoneum was opened a large quantity of cloudy, brownish fluid escaped; intestines were red, injected, lusterless, and covered in places with a grayish-white exudate, as was cecum around the attachment of appendix. Appendix was ligated and cut off. Pelvis was drained with a glass tube, and one piece of iodoform gauze. Incision closed with silkworm-gut sutures.

Died 36 hours after operation, with symptoms of general peritonitis.

Urine after operation was scanty, albuminous and contained hyaline and granular casts.

This case belongs to the fulminating class in which operation must be performed in the first hours of the attack if the life is to be saved, for although the patient was operated upon within 12 hours from the beginning of the attack, the pathologic conditions found at operation would make recovery very exceptional.

Case 2.—W. C., aged 32 years; married; American; machinist. Admitted to German Hospital Nov. 1, 1900, and the following history was obtained:

His father died of old age; mother living and well; 1 brother died of an accident, and 1 sister died in infancy; 3 brothers are living and well. Has used tobacco and malt liquors habitually. Denies venereal diseases. He had measles in childhood, but has been in good health since then. He had a slight attack of abdominal pain two weeks ago, but no other history of appendicitis. His present condition began two days ago. The onset was sudden, with pain in right side of abdomen and tenderness. Bowels were regular before attack; during attack he took castor oil, from which he had two or three bowel movements. The pain was cramp-like, and became steadily worse hour by hour. He had no digestive disturbances; there was rigidity of the right rectus muscle, but no distension.

Operation one hour after admission. Ether was used, which he took badly, becoming markedly cyanosed, with dilated pupils and rapid pulse, while his abdominal walls were not relaxed. An incision five inches long was made through the right rectus muscle. The omentum was red, inflamed and adherent to the intestines. The appendix and bowel around it were densely adherent; appendix was behind the cecum, gangrenous and adherent, and surrounded by a collection of pus. Appendix was freed and removed and cavity drained. Wound partly closed with through-and-through sutures of silkworm gut.

Nov. 4, 1900. Abdomen is flat; passes flatus; stomach retentive; is extremely restless and can not sleep. Has an anxious expression; cold, clammy hands; leaky skin; rapid weak pulse. He is mentally clear. Died at 8 p. m.

Partial postmortem through incision showed partially gangrenous condition of colon, and cecum with a plastic peritonitis; right-sided chronic pleurisy; a severe parenchymatous nephritis.

In this case, as in the previous one, earlier operation was almost essential to a favorable outcome. From the conditions found, there must have been previous attacks, as the adhesions were too dense to have formed entirely in two days. Another of the disadvantages of late operation was here shown, in the large amount of ether he required and a subsequent ether nephritis.

Death was directly due to a septic absorption from a gangrenous bowel, caused either by pressure of exudate, or more likely septic thrombus in the mesenteric vessels. This is probably a commoner cause of death in cases like this than is general septic peritonitis.

Case 3.—H. L., aged 45 years; married; Irish. Was admitted to German Hospital, Jan. 12, 1900, with the following history:

Parents died of old age; does not remember having any of the diseases of childhood; was never sick until present time; smokes moderately; denies venereal disease.

Was first taken sick on Christmas day, 1899, with pain in the right iliac region. The pain came on suddenly and was associated with tenderness and constipation, but no vomiting. Does not think anything that he ate caused the trouble. Has been subject to bellyache for two years, but has had no attacks as severe as the present one. The pain has persisted ever since it began, being a little better for a day or so, and then again worse.

On admission, has pain and tenderness in right iliac region; there is rigidity of right rectus. Blood count: Hemoglobin, 75 per cent.; 4,550,000 reds and 16,000 whites.

Operation, Jan. 18, 1900. The patient was etherized and a long incision made through the rectus muscle. The cecum and appendix were bound down by dense adhesions; when the bowel was finally freed, it was bleeding from numerous points.

An attempt was made to cover the bleeding points with folds from the contiguous peritoneal coat of the cecum. In doing this it was found that the serous coat of the bowel was soft and friable. The appendix was cut out of the cecum, and the wound closed with Lembert sutures. Two large pieces of iodoform gauze were left in for drainage, and the wound partially closed.

Patient died five days after operation, with symptoms pointing to septic absorption from gangrenous bowel, although no postmortem examination was made.

This case was probably one of subacute appendix of two years' standing, and ought to have been operated upon long before.

Case 4.—A. H., aged 18 years, single. Admitted May 13, 1900, to German Hospital, with the following history:

Parents are in good health; 2 brothers died in childhood; 2 brothers and 3 sisters living and well. Except for the diseases of childhood has always been well. Menstruation normal, began at 16 years.

Present illness began two weeks ago with a sharp pain in the right side, accompanied by tenderness and vomiting. The pain continued three days, then gradually subsided, only to return in two days, and was again associated with vomiting. Yesterday—May 12—was the last attack of sharp pain; it lasted several hours, during which she vomited twice.

On admission there is no pain, no tenderness, no rigidity, no nausea or vomiting. No mass palpable through the abdominal wall, but a distinct mass, tender to the touch, is felt through the rectum.

Operation, May 14, 1900; Incision made through the right rectus. The cecum and coils of small bowel in the right iliac fossa were adherent, and when separated a small abscess behind the cecum was ruptured liberating about 50 c.c. of offensive pus. Gauze had been packed about the region to wall off the general peritoneal cavity. The appendix was part of the wall of the abscess referred to, and as it was not sufficient to account for the mass felt in the pelvis per rectum, the pelvis was explored, and an abscess was found containing about 160 c.c. of very malodorous pus. This was evacuated, and a glass drainage tube was inserted. A counter opening was made in the flank, and rubber drainage introduced. One piece of gauze was lightly packed about the rubber tube, to control some bleeding, and two pieces of gauze were placed about the glass drainage. The wound was partially closed with through-and-through sutures.

May 15. Fecal material is coming through the glass drainage. Glass drainage tube removed.

Patient died on the seventh day, May 21, with symptoms of general sepsis.

Urine albuminous with hyaline and granular casts.

This case illustrates what serious conditions may be present, and yet show very few symptoms. Of course, operation should have been done two weeks earlier.

Case 5.—R. J., aged 14, single, schoolboy. Admitted May 19, 1900, and the following history obtained:

Has been sick for three days. The attack came on suddenly with severe pains in abdomen, nausea and vomiting. On admission abdomen distended and painful to touch. Operation as soon as admitted.

An incision was made through the right rectus muscle. On opening the peritoneum a large quantity of yellowish fluid containing white flakes escaped. The appendix was found in the pelvis, surrounded by a large quantity of very offensive pus. The appendix was ligated and excised. Glass drainage tube placed in pelvis. The general abdominal cavity was then thoroughly washed with saline solution. Iodoform gauze placed in for drainage. Part of incision closed with silkworm-gut.

The patient died two days later of general purulent peritonitis.

Case 6.—S. J. N.. Acute appendicitis. Admitted May 28, 1900.

Was sick for ten days before admission; complained of nausea, constipation, pains in abdomen, and tenderness in right side. Two days before admission symptoms became severe.

On admission: Abdomen distended, tympanitic and very painful. Pulse rapid and wiry.

Operation: Incision about 6 inches long made through right rectus muscle. On opening peritoneum about one gallon of cloudy, yellowish serum escaped. Intestines red, covered with exudate, lusterless. The appendix was bound down by adhesions and was gangrenous and contained pus. Appendix was removed; large quantity of offensive pus found in pelvis.

Glass drainage put in pelvis, and three pieces of iodoform gauze packed in, ends being brought out lower part incision. Balance of incision closed with silkworm-gut sutures. Urine albuminous with hyaline and granular casts.

Patient died on third day after operation of septic peritonitis.

Case 7.—M. M., 13 years. Admitted Nov. 15, 1900. Has never had an attack of acute abdominal pain. Has had several bilious attacks in which he had headache and vomiting.

Two days before admission he began to feel sick, nausea and vomiting. The night before admission he was suddenly taken with acute abdominal pain—very severe cramp colic—and vomiting. His bowels moved on day of admission. He had no chill.

When admitted had temperature 102. Pulse 124 and rather weak. He was cyanosed, hands were cold, complained of much pain and tenderness in abdomen. Passed no flatus. Abdomen was very rigid, tender, slightly distended, and tympanitic.

Under ether, the abdomen was opened through the right rectus. Upon opening the peritoneum the pus gushed forth. The abdomen everywhere was filled with foul-smelling, yellowish, thin pus. The intestines were very much inflamed, and in some places covered with lymph and plastic exudate. The appendix, which was behind the cecum, was slightly adherent, gangrenous, perforated in the middle. It was ligated and removed. The abdominal cavity was flushed very thoroughly with saline solution. A glass drainage put in pelvis, and five pieces of iodoform gauze.

During the operation he had a poor pulse, so rapid that it could not be counted. After the operation it was very weak. He vomited, became delirious and very restless. Morphin was given, but it did not act and he suddenly died 21 hours after operation of purulent peritonitis.

Case 8.—B. W. S., age 22 years. Admitted May 31, 1900.

First attack two weeks ago after riding wheel very fast. Was taken suddenly sick with severe pain in abdomen, which became localized on right side. He was treated for a sprain; has been getting progressively worse. Pain not so severe.

On admission: Very tender right side; a fluctuating mass can be felt in the right iliac fossa.

Operation: Incision about 6 inches long made through right rectus muscle; after walling off general cavity with sterile gauze, abscess opened, contained 500 or 600 c.c. offensive pus. Appendix behind cecum and perforated. Second incision was then made in flank to secure free drainage. Abscess cavity packed with iodoform gauze, and incision closed with silkworm-gut.

Patient died 12 hours after operation of shock and peritonitis.

Case 9.—P. B. J., age 26 years. Acute appendicitis. Admission Feb. 5, 1900.

Patient was too ill to get a history. Only a few questions were asked. It was his first attack. Had been taken ill suddenly one week before coming to the hospital. Thought he had an ordinary bellyache and did not send for the doctor until two days later. There was at first great abdominal pain and tenderness all over the abdomen, accompanied by vomiting. The pain gradually localized in the right iliac fossa, and became more severe.

On admission: Patient was having considerable pain, and was exquisitely tender. The rectus was rigid, and there was a mass in the right iliac fossa.

February 6, operation: Patient etherized and a long incision made through the rectus. The cecum and a part of the ilium gangrenous. There were numerous adhesions. In the effort to free the appendix a large abscess below the cecum was ruptured, and a quantity of foul pus liberated.

Blood count: Hemoglobin, 78 per cent.; erythrocytes, 5,020,000; leucocytes, 41,600.

Died 36 hours after operation. Temperature 104 degrees.

Case 10.—Miss M. S., age 27 years. Admitted June 10, 1900.

On admission the patient had pain in the right iliac fossa. There was rigidity, tenderness and dulness in the right iliac fossa. Vaginal examination revealed a tender mass to the fossa of the cervix.

June 10, operation: Incision through the right rectus. Cecal region walled off with gauze. Appendix found turned on itself and behind the cecum. In the attempt to release it an abscess was evacuated. Appendix ligated and cut off. Two pieces of iodoform gauze and a rubber tube were put in as drainage.

Urine albuminous, granular casts.

Patient died on the third day with symptoms of general purulent peritonitis. If organ had not been searched for the abscess would not have been discovered.

Case 11.—W. B., age 52 years. Acute appendicitis. Admitted July 7, 1900.

Family history negative. Always in good health until 50 years of age. Complained then of malaise. Appetite good; bowels constipated; throat felt dry; drank large quantities of water. Passed large quantities of urine. One year ago had right leg bruised. Broke down and had open sore for two or three months. Six months ago noticed left big toe black and stiff. Small sore under toe which was discharging. This went on until had an ulcer along tendon leading to big toe; three months later toe came off; no pain. Now complains of dryness of mouth and throat. Drinking does not satisfy. Is beginning to lose appetite; some nausea and vomiting; lost weight; 12 days ago had an attack of cramp-like pains in abdomen; came on suddenly; nausea and vomiting. Three days later had fly blisters put on right side. This raised blister which instead of healing left two running ulcers.

On admission: An exquisitely tender and very hard mass can be felt in the right flank and iliac fossa. No fluctuation at this time. Later the mass broke down and showed fluctuation. Not so tender.

Operation: Incision about 2 inches long made transversely above crest of ilium under local anesthesia. Large quantity, 500 c.c. E, dark vile-smelling pus evacuated. Abscess cavity washed out and three pieces rubber tubing inserted for drainage. Wound then dressed antiseptically.

While pus was being evacuated a piece of rotten tissue came out, was about 4 inches long and ¼-inch wide. Could not tell what kind of tissue. Supposed to be appendix. Died on third day after operation in diabetic coma.

Case 12.—H. K., age 17 years. Acute appendicitis. Admitted June 8, 1900.

Always in very good health until two months ago, when had an attack of appendicitis. Was then sick for several days. Attack came on suddenly with cramp-like pains in abdomen, very severe. These pains lasted for several hours, then had pain in lower part of abdomen, particularly in right side. Was then up working on delivery wagon, noticing at times slight pains in right side when jumping off wagon. Two weeks later had another attack lasting three or five days. Few days later had third attack, was sick for two days, but did not have to go to bed. Present trouble began two days before admission; had cramps in abdomen for short time, since then had continuous pain in lower part of abdomen and right side. Has vomited twice. Examination shows tenderness on pressure in left and right inguinal regions. Rectus muscles, both sides, more rigid than normal, especially right.

Operation: Incision about 3 inches long made through right rectus muscle; appendix found in pelvis bound down by adhesions. After protecting general peritoneal cavity by packing with gauze, adhesions broken up, finding several c.c. of purulent, bad-smelling pus.

Death due to general septic infection.

Did not have a general peritonitis; in this case the abscess was not discovered until the appendix was searched for.

Case 13.—C. C., age 22 years. Acute appendicitis. Admitted Dec. 24, 1900.

Patient has always been in good health with the exception of slight colds and an attack of influenza. His habits good. Does not use tobacco or alcohol. Denies venereal diseases. Has never had an attack of appendicitis before. Bowels regular. Appetite and digestion good.

Five days before admission he complained of feeling unwell. He had pain under the lower border of ribs on the right side. He had no appetite. Bowels moved regularly.

The pain became worse and more general, but more marked on right side, from the level of the umbilicus to the lower border of ribs. The pain was constant and cramp-like, and two days later there was marked tenderness all over right side, high up, near gall bladder, but pressure over the appendix caused the pain to become worse. Appendicitis with the appendix pointing up toward the liver was diagnosed. There was no marked distension or dulness.

Under ether an incision was made at McBurney's point. The abdominal walls were not thoroughly relaxed. The appendix was very long, and ran under the cecum up to the liver, and was gangrenous in three places. It could not be delivered in the usual manner, so the proximal end was ligated and then pulled out without ligating the appendicular artery, which was so deep that it could not be reached. There was pus present behind cecum. Drainage by rubber tube in loin and six pieces of iodoform gauze.

After operation his pulse became very rapid and there was a marked hemorrhage through the loin incision, which was controlled by packing with gauze.

His abdomen became distended on second day; pulse was very weak. He received streptococcic serum, but it had no effect. He was transfused four times the last 36 hours before death, receiving 8500 c.c. salines. He became restless, delirious, and on receiving hyoscin and morphin, he slept until the end without being conscious.

Incision was not opened for postmortem.

December 25: Hemoglobin, 95 per cent.; erythrocytes, 4,110,000; leucocytes, 14,200.

December 26: Hemoglobin, 90 per cent.; erythrocytes, 4,150,000; leucocytes, 20,400.

Probable post-operative gangrene of cecum. The hemorrhage after operation was an important factor in this man's death, as it lowered his powers of resistance.

Case 14.—J. D. Acute appendicitis. Admitted May 7, 1900.

Had been sick for three days; was taken suddenly sick with acute pains in abdomen, which became localized in right side; bowels constipated. On admission found exquisite tenderness, right side. Rigidity of right rectus muscle. Mass can be felt in right flank.

May 8, operation: Incision through right rectus muscle. Appendix behind cecum bound down firmly by adhesions. Abscess behind cecum extending upward and backward. Appendix perforated at distal end. Abscess evacuated and appendix removed and hole in cecum closed. Incision made in flank, rubber drainage tube inserted. Abscess cavity packed with six pieces of iodoform gauze.

May 9, 7 a. m; few râles noticed over right side of chest; 10:20 a. m., crepitant râles; increased fremitus and resonance, right base; slight cough.

Died on second day after operation of pneumonia.

Urine contained albumin and casts.

Case 15.—J. S., age 52 years. Acute appendicitis. Admitted March 24, 1900.

Patient was suddenly taken ill two and one-half days before admission, with pain, nausea and rigidity. Pain became localized to right iliac fossa. Operation advised, and took place 20 minutes after arrival in hospital, so that little history was obtained.

Much pain, distension, and shock on admission. No flatus or feces passed for 12 hours. Probably due to a paresis of bowel.

March 24, operation: Incision 5 inches long in right rectus. Peritoneum opened; bowels red, injected, and much distended. Appendix behind cecum, bound down by adhesions and gangrenous. Patient died on operating table.

Case 16.—C. H., age 21 years. Acute appendicitis. Admitted May 28, 1900.

Sick four days. Attack came on suddenly with severe pain in abdomen, nausea, vomiting and constipation. No passage of gas. Abdomen distended, muscles rigid and exquisitely tender.

Operation: Found general purulent peritonitis. Appendix bound down by dense adhesions, and surrounded by inflammatory lymph. Appendix, which pointed toward pelvis, was gangrenous, as was cecum near attachment of appendix. Appendix ligated and excised. Glass drainage with four pieces of iodoform gauze packed around.

Patient did not come out of ether, and died four hours after operation.

Case 17.—E. A. G., age 28 years. Acute appendicitis. Admitted May 19, 1900.

Has had trouble for several years.

Operation: Incision made parallel to Poupart's ligament, opening up abscess which extended down into the pelvis. Second incision then made through right rectus muscle, intestines bound together with firm adhesions, and between the coils numerous small cysts filled with dark, cloudy fluid. Appendix, which was gangrenous, was found in pelvis, was ligated and removed. Large cyst of right broad ligament, both ovaries cystic.

Glass drainage tube and two pieces of iodoform gauze put in place, and incision partly closed with silkworm-gut sutures. First incision packed with iodoform gauze.

During operation patient's lungs and trachea became full of mucus. Pulse weak and rapid. Face blue. Inability to breathe. Tracheotomy then done and patient revived after artificial respiration kept up for several minutes.

10 p. m., patient transfused 3000 c.c. saline solution. Died at 6 a. m., 12 hours after operation, from shock.

Case 18.—J. B., age 19. Acute appendicitis. Admitted Nov. 20, 1900.

Has never been sick in bed. Had several slight colds. Denies gonorrhea and syphilis. Had an attack of abdominal pain which lasted four days in August.

Had an attack of acute abdominal pain at 10:30 last night. Came on gradually with acute pain all over the abdomen, localized near umbilicus. No localized pain at McBurney's point. Bowels moved soon after attack began. Was nauseated and vomited. Could not sleep on account of pain, which was dull in character with occasional paroxysms. Had eaten nothing unusual before the attack.

When admitted had pulse of 116. Temperature 101 4/5. Had received a hypodermic of morphia before he was admitted, from effects of which he was drowsy. Had no pain and was not tender on gentle touch over the appendix or on the left side. The abdomen was markedly rigid on both sides. No dulness noted. Did not vomit. Lungs clear; heart normal; liver dulness, not enlarged; spleen normal.

Operation: Under ether, an incision was made through the right rectus muscle. On opening the peritoneum, pus escaped. There was pus all over the abdomen. The bowels were injected. Large pieces of gauze were put into abdomen to wall of the bowels, and the appendix, which occupied the pelvis, was then delivered, ligated, cut off, and the stump washed with bichlorid and carbolic solution. A glass drainage tube was introduced into pelvis, and there was a great discharge of pus. The most of the purulent matter, which was creamy in color, and of not very foul odor, was in the pelvis. A large piece of iodoform gauze was put down into the pelvis, one along the cecum, and one over the intestines. Three pieces of gauze and a glass drainage tube left in. The wound was partially closed with silkworm-gut sutures through and through.

Second day after operation, began to have distension of abdomen, passed no flatus. Pulse became weaker. The distension soon became marked. He began to vomit and was restless. The gauze was removed on the fourth day, when he showed all the symptoms of a general peritonitis. He was transfused with 2000 c.c. salines. He was conscious to the end. The pulse was better after the transfusion for six hours only. He died while vomiting; the vomit seemed to get into his larynx and strangle him. Urine scanty and albuminous, with granular casts. General peritonitis.

CASE 19.—M. K., age 25 years. Acute appendicitis. Admitted Aug. 19, 1900.

Had had several well-defined attacks of appendicitis during the past four years, none of which, however, were very severe.

Present illness began suddenly 10 days before admission, with severe cramp-like pains in the abdomen accompanied by diarrhea and vomiting. Later the pain localized itself to the right iliac fossa, where he was very tender and a mass could be distinctly palpated.

Operation: Performed immediately after admission. Incision 5 inches long through right rectus muscle. Bowels packed away with sterile gauze. Abscess found behind the cecum, with the appendix, which was inflamed, bound down in the pelvis by adhesions. Adhesions broken up and appendix ligated and removed.

Patient reacted from the ether, but during the second twenty-four hours after operation vomited a few times. Passed gas freely and bowels moved on the second day and stomach became retentive. Patient was excessively nervous and at times became delirious.

Tube became perfectly dry on the 4th day, and was removed along with the gauze and replaced by two rubber tubes. Patient's nervousness and restlessness increased every hour, in spite of all that could be done to control it, and he died finally of exhaustion on the 7th day after operation, due to septic infection.

Urine scanty and albuminous, containing hyaline and granular casts.

CASE 20.—J. K., age 29 years. Acute appendicitis. Admitted Dec. 7, 1900.

Father, mother, two brothers and two sisters living and well. No family history of phthisis. Had the milder diseases of childhood. Enteric fever in summer of 1899. Has not been well since. Always complained of pain in chest and abdomen.

Nov. 5, 1900, was taken suddenly sick with abdominal pain, which was very severe for a few hours, and came on again from time to time. December 1, he was again taken with severe pain, vomiting, tenderness in right iliac fossa which gradually grew worse. Had history of phthisis. When admitted he had a mass in right iliac fossa, prominence of wh could be seen. He was very tender, there was dulness present and marked rigidity. He was operated upon as soon as admitted.

Under ether, incision was made through right semilunar line; there was a large mass on right side walled off by small bowels and omentum. The abscess cavity was between the parietal peritoneum and the cecum. This was opened and thoroughly cleansed by bichlorid solution. Part of the omentum was indurated; this was tied and cut off. The appendix was on the cecal side of the abscess. It was gangrenous, very large and fragile. It was tied off and removed.

Five pieces of iodoform gauze and a glass drainage tube was put into abscess cavity and part of wound closed with silkworm-gut sutures.

After the operation his pulse was better than before. He was restless, vomited and hiccoughed a great deal. Tube was cleaned, and contained pus and blood. He did not cough. Stomach was not retentive. Twelve hours before death he became very restless, pulse became very weak. He was conscious to the end. Vomited fecal matter, bowels became very loose, and died with symptoms of peritonitis.

Blood count: Hemoglobin, 68 per cent.; erythrocytes, 4,470,000; leucocytes, 19,000. Urine albuminous and casts. General purulent peritonitis.

CASE 21.—M. S. M., aged 30 years. Acute appendicitis. admitted Sept. 25, 1900.

Has had six attacks of appendicitis of varied intensity and duration, from a few hours up to 10 days. Usually vomited with the attacks.

Present attack began 24 hours before admission; had had diarrhea for a day or two before. Was suddenly seized with general abdominal pain and vomiting, after a few hours pain became localized to right iliac fossa, where it became very severe, and was accompanied by exquisite tenderness. Pain was so severe that he had taken 2½ grains of morphia in the twenty-four hours before admission, without entirely controlling it.

On admission: Temperature 102, pulse 96 and soft. Abdomen slightly distended; right rectus very rigid; exquisitely tender in right iliac fossa, where there is a sense of fulness on palpation, although no distinct mass can be made out.

Incision 6 inches long through right rectus muscle. Appendix found to be perforated and gangrenous, and to be tied up with the cecum. and small bowel in mass of adhesions. A small quantity of pus around the appendix. Pus evacuated and appendix freed, but on tightening it, tissues so friable that it cut through. Hole in cecum closed as well as possible, but owing to its devitalized condition stitches cut out very often. Meso-cecum brought over the place and fastened there; omentum too gangrenous to serve. Lower part of omentum ligated and cut off. Three pieces of iodoform gauze packed around the infected area separating it from the general abdominal cavity. Upper and lower parts of wound closed.

Patient came out of ether all right, but after a few hours general peritonitis set in, and patient died about 60 hours after operation.

CASE 22.—Mrs. R. O'B. Acute appendicitis. Admitted Jan. 19, 1900. Has always had good health. No previous attack of appendicitis.

The patient was taken ill with fever, slight abdominal pain, some diarrhea, headache, pains in back and legs, and marked malaise. This was about seven weeks before she was brought to the hospital. For some time she was treated on the supposition that she had influenza of the gastro-intestinal type, or a mild enteric fever, although there were no spots or nose bleeding. Then the diarrhea was followed by constipation, the abdominal pain became much more severe, and was cramp-like, the right iliac fossa began to be markedly tender on the slightest palpation, and on careful examination a slight localized mass could be made out in the appendiceal region. There was no vomiting. The patient and family were advised that an operation was necessary, but refused to follow the advice. Patient gradually lost flesh and strength, and attained a septic appearance. At times she would perspire freely, and at other times have chilly sensations. The pain gradually disappeared to a large extent. The mass was easily palpable. The fever persisted and was decidedly septic in character. Finally an operation was consented to.

Operation: January 21, an incision about 4 inches in length was made through the right rectus muscle. An abscess about the size of a goose egg lay back of the cecum, and in this lay the gangrenous appendix, running up to the posterior aspect of the cecum so that the tip almost reached the lower border of the liver. The pus was evacuated, and the appendix, with the neighboring necrosed structures and indurated masses of tissue, was removed. The weakened and in places slightly ruptured portions of the posterior aspect of the cecum were sutured with fine black silk. A counter incision was made in the flank to permit through-and-through drainage.

Urine albuminous. Hyaline and granular casts.

Died on the 12th day after operation. Bowels very loose from operation to time of death. Pulse rapid and weak.

Symptoms pointed to death from septic absorption from gangrenous bowel.

CASE 23.—J. E. V., age 36. Acute appendicitis. Admitted Nov. 23, 1900.

Has never been sick in bed except with appendicitis. Two years ago had an attack of appendicitis. Was sick six weeks. Bowels inclined to be constipated. Had an irritable stomach.

Present attack began about 10 days before admission; had pain in his abdomen, which became very severe a few days before admission. Vomited very often. Pain and tenderness were much worse on right side. When admitted he had temperature 101, pulse 112. Had a large mass in right iliac fossa.

Under ether an incision was made on the right side, going through the rectus muscle. The appendix, which pointed towards the pelvis, was bound down by many adhesions. The large and small bowel were adherent. The adhesions were separated in freeing the appendix, which was markedly inflamed and surrounded by pus. The appendix was ligated and removed.

Developed a fecal fistula a few days after operation. Patient was never strong after operation. Stomach was irritable. An abscess developed in right buttock. Several days before his death there was pus in his stools, and after it made its appearance he began to sink. It was caused by the rupture of a deep abscess in his buttock, rupturing into the rectum. This wound was opened after death. The intestines were in good shape. The kidneys were enlarged, and the seat of parenchymatous inflammation. Underneath the peritoneum and traveling along the psoas muscle was an abscess which pointed in the buttock, and ruptured into the rectum. This so weakened him that he finally became delirious and died.

Urine albuminous with hyaline and granular casts.

On admission, blood count: Hemoglobin, 75 per cent.; erythrocytes, 4,970,000; leucocytes, 14,800.

Case 24.—C. L., aged 17 years. Acute appendicitis. Admitted Jan. 29, 1900.

One week before admission the patient was suddenly seized with a pain in the right iliac fossa. While there was some general abdominal pain, it was most acute in the lower right quadrant. Bowels had been sluggish for some time before this. Vomiting started the second day. These symptoms, with great tenderness, persisted until the third day, when all the symptoms diminished in severity. On the day before admission to the hospital an exacerbation of the symptoms occurred, the patient suffering more than in the beginning of the attack. On admission it was found that there was exquisite tenderness and a mass in the right iliac fossa. The right rectus was markedly rigid.

Operation: A long incision was made through the right rectus muscle. Immediately upon opening the peritoneum a large quantity of malodorous pus escaped. The intestines in the lower right quadrant were matted together by adhesions, and there was an abundance of organized lymph gluing everything together. After considerable work separating the bowel, the head of the colon was freed sufficiently to locate the appendix. It was in such a position to the inner side of the cecum as to point toward the spleen. There was a small perforation near the distal end, and the entire organ was encased in organized lymph. As the cecum could not be brought out of the wound, the appendix was ligated and cut off the cecum. Glass drainage.

February 22. Intestinal obstruction: The patient has been having severe pains off and on for a week or two, and they have been growing worse, coming oftener, and lasting longer. Yesterday he began to vomit. To-day vomiting, no flatus and the outline of the bowels showing on the surface of the abdomen. Great pain. In a fit of coughing broke the wound partly open, and the intestines protrude.

Old incision opened; numerous adhesions found, and at one point the ileum was caught in such a way as to be an obstruction to the lumen of the bowel. Below this point it was collapsed, above inflated. The bowel was freed and all adhesions broken up, and the wound closed as usual.

Patient died within 12 hours after the second operation. Intestinal obstruction from adhesions.

Case 25.—A. B., aged 50 years. Acute appendicitis with abscess. Admitted Aug. 23, 1900.

Patient was admitted on the eighth day of an attack of acute appendicitis. Could speak Italian only, and no history was obtainable. On admission temperature was 100 degrees, pulse 96. Has a large tender mass occupying the right iliac fossa.

An incision 7 inches long was made through the right rectus muscle. Immediately on opening the peritoneum a large collection of pus was encountered; this escaped both externally and into the general peritoneal cavity.

The abscess wall was found to consist of thickened mesentery and coils of small bowel, glued together by inflammatory exudate. Appendix, which pointed toward the cecum, was ligated and removed.

The patient came out of ether nicely, and was comfortable all night, but on the next day general peritonitis began, and the patient died 48 hours later.

Case 26.—J. S., age 20. Appendicitis; chronic ovarian cyst. Admitted Aug. 7, 1900.

One year ago had an attack of appendicitis, was sick six weeks. Since then complained of a feeling of fulness and some pain in the right iliac fossa. No nausea or vomiting. Menses normal.

Examination shows tenderness on pressure in the region of appendix.

Operation: Incision made through right rectus muscle. General peritoneal cavity walled off with gauze; found ovarian cyst about size of an orange. Appendix in pelvis, and bound to cyst by numerous adhesions; many small cysts between knuckles of bowels, filled with yellowish, muddy fluid. Adhesions broken up and right tube and ovary removed. Cyst was filled with dark-yellowish, cloudy serum. Appendix, which showed chronic inflammation changes, was ligated and removed. Great omentum was adherent to cyst. These adhesions broken up, omentum ligated and about 1½ inches excised. Glass drainage tube put in place and wound closed.

Patient was apparently doing well after operation, bowels moving freely on the second day. On the third day glass drainage was removed, and wound closed completely, by tying the previously introduced stitches.

Twenty-four hours later symptoms of general septic peritonitis began, with pulse of 132. Vomiting was practically continuous, and in a few hours became the typical black vomit of septic peritonitis. Abdomen became tympanitic and was extremely tender. Twenty-four hours after onset of peritonitis, the lower part of the incision was opened, and the abdomen flushed out and drainage again introduced. This, however, failed to arrest the progress of the disease, and the patient died on the sixth day after operation.

Infected at the time of removal of the drainage tube.

Case 27.—E. D., aged 38 years. Acute appendicitis. Admitted April 2, 1900. Had congestion of brain and spine three years ago. Present trouble began February 10, complained of general abdominal pain, cramp-like in character; later pain localized, right side. Bowels regular. Vomited for 3 or 4 hours.

On admission find mass in right side about 4 inches long by 2 wide, very hard, and painful to touch. Can not straighten out right leg. History of having passed pus from bowels four times.

First incision 3½ inches long, made just inside anterior superior spine of ileum, near mass, at angle of about 45 degrees to Poupart's ligament and running up and outward above anterior superior spine. On reaching external oblique muscle, found it hard and indurated from inflammatory infiltration. On cutting deeper, knife entered mass soft broken down anterior. This was washed out with carbolic and bichlorid. Lightly packed with two pieces of iodoform gauze.

Second incision made to right median line through right rectus muscle into peritoneal cavity. On elevating abdominal wall, found ileum and cecum adherent to parietal peritoneum; cecum separated from peritoneum with difficulty. This done, the appendix was found behind and to the outer side of cecum, enmassed in considerable amount of organized lymph.

Blood count; Hemoglobin, 70 per cent.; erythrocytes, 3,840,000; leucocytes, 21,580. Urine normal. Died on third day after operation of general purulent peritonitis.

This case is probably one which was infected at the time of operation, although every precaution to protect the peritoneum was taken. Abscess of the abdominal wall.

Early Sign of Measles.—Two French writers have recently called attention to the sore throat, studded with white dots, which they have observed in a large number of cases of measles. This sore throat precedes the other symptoms of measles by several days, and the diphtheria bacillus was found in the throat in several instances, leading to an erroneous diagnosis.

SYMPTOMATOLOGY OF CEREBRAL HEMORRHAGE.[*]

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The symptoms of cerebral hemorrhage, in unison with many other of the acute affections of the central nervous system, are so frequently aberrant and simulated by different diseases producing a sudden insult to that vital organ of the body, the brain, that rehearsing the subject as a whole seems timely before this representative body. We shall dwell upon the cardinal symptoms in due measure, we trust, and yet hope to point out the more unusual signs resulting from rupture of the cerebral vessels. Coming under the head of cerebral hemorrhage, not only an extravasation of blood in or about the brain, but thrombosis or embolism producing acute softening, which latter is indeed difficult to distinguish from a slow exudation of blood within the encephalon. This latter condition was shown recently in consultation with Dr. Küsel in a man, aged 63, visited on March 7, 1901. There was no history of alcoholism or specific disease. He had had, five years ago, an "attack" in which vertigo was a prominent symptom, there being no paralysis resultant, but he was left with difficulty of speech (motor aphasia) and acute asthenia following the injury to the brain, which confined him to bed for three weeks. The man had never been well since; he complained of feebleness but no paralysis, the speech defect remaining up to the day of his present illness, which occurred Feb. 1, 1901. His speech first becoming worse as to the aphasia, he was taken to his bed with what was pronounced a complicating attack of influenza. About a week after he had been confined to the bed, it was noticed there was some weakness of the right upper and lower extremities, and of the body. There was never conjugate deviation of the eyes. When I saw him on March 7 he was moribund; there was no pupillary response, nor could reflexes be detected anywhere. The temperature in the right axilla was 105.8 F.; in the left axilla, 105. The bladder was distended with urine which, when drawn, proved negative; this in all probability eliminated nephritis as an etiological factor.

The particular symptom occurring for three or four days before death perhaps has some weight in the diagnosis of these cases from hemorrhage *per se*, i. e., the symptom of decided mental excitement, still somewhat under the control of the individual. This was shown by the fact that this man, during the spells of hallooing at the top of his voice, could be quieted for the time being by his wife's forcibly correcting him, the patient relapsing again into excitement; he could not explain why he had cried out so. As said before, it seems to me that this symptom deserves some stress laid upon it as a sign of acute softening of the brain rather than massive hemorrhage, where, as in this case, it is difficult to determine the extent of the motor paralysis.

At necropsy, we found an area of softening in the left parietal lobe extending down to the lateral ventricle, the size of a silver dollar at its base on the cortex, due to arteriosclerosis of the cerebral arteries, especially of the posterior cerebral artery.

Symptoms of a typical case of cerebral hemorrhage are divided into those of the acute stage and those of the later or chronic stage. While the patient may have been feeling some premonitory signs, such as dizziness, headache and dulness of mentality for some days or weeks before the onset of the attack, still it is the rule that he is feeling particularly well immediately preceding the apoplexy, which in the majority of instances occurs during the sleeping hours of the night. This fact has always interested me from a psychological point of view, and is probably explained by the fact that inhibition generally is lessened during the early hours of the morning and very likely there is much less resistance within the encephalon, thus allowing overdistension of the cerebral vessels which produces the "breaking strain" in sclerosed cerebral arteries. This does seem somewhat paradoxical when considered in relation to physics, since increase of vascular area and therefore capacity to bring lessened arterial tension at any given point; but as inferred above, the greatly reduced "force de résistance" at the vulnerable point occurring at the site of a patch of sclerosis and fatty degeneration, will permit overdistension of the media and thus rupture. The patient, therefore, in 50 per cent. of instances on awakening, discovers that he is paretic or totally paralyzed in one side of the body. There may be little or no sensory phenomena so-called; the effort to move alone attracts his attention; or it may be that a motor aphasia is the only symptom the patient complains of, which in itself produces a mental excitement from apprehension as well as, no doubt, from disturbing the proper co-relation of neuronic force—the so-called nervous energy. This leads me to the suggestion to apply this same theory of disturbed nerve currents (somewhat identical with the ultimate result of disturbance of nerve energy due to the coaptation or retraction of the protoplasm of the neuron—the so-called neuronic theory) in explanation of the peculiar emotional state of the person suffering from cerebral hemorrhage. This manifestation of the psychology of apoplexy very likely may be produced by the abrupt severance of the proper association of other concept centers with the center of ideation.

If the hemorrhage has been massive, the patient will, of course, be found comatose. The conjugate deviation of the eyes will occur towards the affected side, the pupils will be dilated generally one more than the other and will be only slightly responsive to light stimuli. The reflexes will be found abolished on the affected side at this stage. At the end of a few hours, the knee-jerk and other reflexes which have been abolished now return and become increased from day to day due to irritation of the motor tract from the cerebral lesion whether it be a hemorrhage, embolus or thrombus. The patient will breathe heavily; perhaps the Cheyne-Stokes style of respiration will prevail. The temperature will be found increased both on the surface, where the affected side of the body shows an increase of 2/5 or 3/5 above the opposite side, the degree of caloric developed being 102 to 103 in the axilla and slightly above this when taken under the tongue or in the rectum. The patient generally lies supine, the paralyzed extremities may be hyperesthetic and within an hour or so when consciousness partially returns, if the case progresses favorably, the patient will frequently brush away the clothing or any irritating body, as a house fly, which may light on the paretic member. If the patient is to recover, the temperature drops at the end of four or six hours; the pulse which had been slow and full will become softer and will increase in frequency to slightly above the normal. Flushing and cyanosis of the face will then disappear and the mentality be restored gradually, although the mental anxiety and lacrymoses may be shown at once in the physiognomy of the patient, aside from any paralysis in the face or vocal apparatus which may maintain. This sudden change of expression of the individual is an interesting and sad indicator of the havoc played by extensive organic rupture in the brain mass. There usually is a secondary rise of temperature even in a favorable case, due no doubt to irritation of the heat regulating mechanism; finally, after six or seven days, the temperature will remain irregular and hovering about the normal line. Within ten days or two weeks in the average case, the patient may be able to move about with the assistance of crutches if his previous condition of health has been fair; if he has been in a low stage of health, the ability to use the musculature will be proportionately lessened, all depending therefore on the idiosyncrasy and reserve nerve force. As a rule, it is safe to say that the patient's nervous system is insulted enough by any sort of hemorrhage to warrant absolute quiet for a fortnight, which should be carried out religiously by the physician if relapse is to be prevented.

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[*] Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Nervous and Mental Diseases, and approved for publication by the Executive Committee: Drs Frederick Peterson, Hugh T. Patrick and H. A. Tomlinson.

The diagnosis of pachymeningitis interna hæmorrhagic might at first seem unnecessary to mention in a paper on symptomatology of cerebral hemorrhage, but the condition is most difficult to diagnose. Two cases recently coming under my observation will uphold this view.

In my own case, that of J. McM., white, age 38, admitted to the Philadelphia Hospital on March 4, 1901, gave a history of previous venereal infection and that he had always been a heavy drinker. He had lately been intoxicated for three weeks, had mental stupor when first examined with hallucinations of hearing and sight. For the past three years he has been more or less a sufferer from shooting pains in the legs which he says were slightly rigid; this rigidity did not grow worse, although there was no lessening of the symptom. About two months before admission, the patient complained of incontinence of urine; and about a week previous to admission, of incontinence of the rectal muscle. On examination, the pupils were equal and slightly irregular in outline, the right pupil being smaller, both reacting sluggishly to light. The tongue was protruded straight; the speech was slow but not tremulous; the pulse was slow, intermittent, irregular. There was marked arteriosclerosis. The patient lay heavily in the bed in log-like inactivity, moving the arms and legs but slightly. The right leg was markedly spastic, the knee-jerk being very much exaggerated but the spasticity so great as to prevent the development of ankle clonus. There was no local atrophy; there was hyperesthesia of the plantar surface of the right foot; there was no Babinski reflex; there was but slight spasticity of the left leg and foot. Knee-jerk was greatly exaggerated and feeble ankle clonus was present. Sensation of pain and touch seemed absent over left foot and leg to the level of the knee; there was feeble plantar reflex on the left; sensation was retarded over the remaining portion of the left lower limb. There was much spasticity of the arms, the patient being lifted from the bed while lying supine, when there was forcible extension of the forearms of the right side, evidently caused by the contraction of the scapular and trapezius muscles. The spasticity was of lead-pipe quality, more marked on the right side, but also present as stated on the left. Sensation to pain was present, not localized as to point of pressure, but referred downward in the course of the periphery of the nerve.

Examined March 8, it was noted that the left pupil was twice as large as the right; the man was in a semi-conscious condition; answered questions only in monosyllables; there was marked tremor of the lips; the right elbow could not be extended to a right angle, the right arm being held pronated. The patient had a fair grasp in the right hand; but there was no grasp in the left hand, though the spasticity in the left arm seems almost as great as that in the right; the right leg was very spastic and a large tremor grew as it was raised from the bed. There was no clonus on the right side nor on the left to-day; there was no evidence of ecchymosis anywhere. There was flexion of ankle on irritating the sole of right foot, although the toes themselves did not extend as is usual in the Babinski reflex; in the left foot, the toes did extend on irritating the sole, although there was not as much extension as of ankle flexion as compared to the right side. The skin was reddened in the sacral region. Hearing was much obtunded, although he could appreciate the watch tick on contact. There was some slight retraction of the neck. Patient lies supine. There is no form of aphasia present to account for the difficulty of expressing himself; this being entirely mental. There is no astereognosis in the right hand, but the left hand seems to be anesthetic in the palm and up to the forearm to the elbow, making absence of ability to appreciate objects in shape and size.

March 9, the patient is more stuporous, although he will answer questions in monosyllables.

March 10, patient seems somewhat brighter, complains of general pain in the head. Pupils are almost equal in size. Right arm can be moved quite freely; left arm is spastic and can not be moved by the patient. He can move right leg freely, and left leg not at all. Both legs are slightly spastic, but much less so than two days ago.

March 11, patient is perspiring freely. Seems rational, although he talks in a very low voice. Complains of pain in chest. A few sonorous râles. Resonance clear.

March 13, patient is incoherent; will obey commands, however; opens and shuts his eyes.

March 16, pulse soft and rapid. Respiration rapid and shallow, not stertorous. Temperature gradually rose to 103 degrees. Death supervened.

Autopsy.—Upon opening skull cap, considerable blood escaped and a large hemorrhage was found. This proved to be subdural, and on the right side. It extended from the occipital to the frontal lobe and downward to the Sylvian fissure, extending into the latter so as to separate the temporal and opercular convolutions from the island of Reil. A glass held below the skull as the brain was removed, collected 50 c.c. of blood and cerebrospinal fluid. When the dura mater, containing a large clot, was removed, the surface of the brain was considerably flattened; therefore must have been under considerable pressure. Vessels of pia were deeply congested. On opening left lateral ventricle, it was distended with cerebrospinal fluid, lateral ventricle of right side compressed so as to be almost occluded. Choroid plexus of left side terminated in a soft tumor the size of a soap bean.

Case II.—Through the kindness of Dr. James Tyson, I am permitted to report a case of similar nature though the lesion is on the left side of the brain. The man was admitted to the medical wards of the Philadelphia Hospital, and died of chronic nephritis.

Male, white, aged 71, semiconscious on admission, due to the uremia. He was able to walk about at the end of a week, with spastic hemiplegia, right side. How long, as in my own case (3 years), he had been afflicted with the dural disease, does not appear from his vague statements; although he was likely afflicted many months.

Autopsy.—Dura mater quite adherent to skull over left hemisphere; and pachymeningitis interna hæmorrhagica was found. Hemisphere below this was somewhat compressed; and the lateral ventricle below it was collapsed. Brain itself was normal. Hemorrhagic area extends over the whole superior and external portion of the left hemisphere, descending to the level of the fissure of Sylvius.

Paralysis is never so complete in the hemiplegia from pachymeningitis interna hemorrhagica, for if complete, death would supervene. Therefore, in a given case of hemiplegia, a positive sign that it is not due to dural hemorrhage, would be in the occurrence of complete pachymeningitis. Fifty per cent. of cases are unilateral in pachymeningitis hæmorrhagica.

Ingravescent hemorrhage and pachymeningitis interna hæmorrhagica have some points in common which are confusing in diagnosis. In both there is apt to be no loss of consciousness; although in the former there is less likelihood of rise of temperature, while in the latter there is elevation of the temperature curve to 102 or 103 or more degrees F., but of irregular type and associated with rather severe pain in the head. Then the spasticity which would occur from cortical irritation from pachymeningitis, would be the positive point as against hemorrhage in the external capsule.

Another differential point in diagnosis between ingravescent hemorrhage and subcortical tumor in the motor area, is to be made in some cases. The history of the case would be important as bearing upon this subject, as well as the examination of the eye grounds where optic neuritis would be present and of high grade in the case of tumor; it almost never being present in the slow hemorrhage, since the neuritis would not have time to develop at the moment of examination.

Hemorrhage into the crus cerebri would be told by the irregularity of symptoms in the first place, and secondly from the alternate hemiplegia following and generally associated with some sensory loss on the hemiplegia side and accompanied by paralysis of the oculomotor nerve on the same side.

Hemorrhage into the pons is very difficult of determination but would be told by critical examination for a crossed paralysis affecting the face on the same side, as hemiplegia in the case of hemorrhage into the upper portion of the oblongata; or secondly, of the face on the same side, if the hemorrhage were situated in the lower portion of the pons. The association of urgent cardiac and respiratory symptoms would be indicative of hemorrhage into the pons. I presented the rare specimen of a case of hemorrhage bilaterally into the pons and into one crus cerebri, this winter before the Pathological Society of Philadelphia, and which I will have the pleasure of showing to the Section. The mixed symptoms resultant from such a lesion, it would seem to me, make diagnosis quite impossible.

Hemorrhage into the spinal cord high up, would be apt to occur in specific cases and the Brown-Séquard syndrome would follow. Hemorrhage into the membranes into the cord would be associated with large paresthesia or pain distributed to the periphery of the nerves from the segment of the cord encroached upon, and in my experience, not the most difficult for diagnosis; as shown in the case seen with Professor Rodman, this winter, where diagnosis has been confirmed, I take it, by the constant improvement in the case through electric treatment, massage and rest, to quite complete restoration of the paraplegia sequent upon pressure in the lumbar cord, due to a fall down an elevator shaft. Trauma, too, is apt to be a point gotten in the history of such cases. But it is not my province to go in for discussion of disease of the spinal cord.

In the above cursory way, the writer has attempted to give the salient features that have come to his observation for actual determination of one of the most difficult neural affections within the cranium or spinal canal to positively differentiate.

DISCUSSION.

Dr. Hugh T. Patrick, Chicago—I simply wish to say a word in reference to the mystery as to why hemorrhage of the brain comes with peculiar frequency at night, while the patient is asleep and there is no increase of arterial tension. Like the old question, why is it that a vessel nearly filled with water into which a fish is introduced weighs just the same as it did before, the explanation is, that it does not. Cerebral hemorrhage does not occur with peculiar frequency during the night or while people are asleep. That was a theory which was asserted prematurely and it has been disproven a number of times. The statistics gathered by Dana and others show that cerebral hemorrhage does not occur with especial frequency at night. Thrombosis, on the other hand, occurs more frequently at night. I will not take up any more time by discussing the theory of neuron contraction, to which Dr. Pearce referred, as it would be a pure waste of cerebral activity. The theory of neuron contraction never had a single solitary basis upon which to rest.

Dr. F. W. Langdon, Cincinnati—I indorse what Dr. Patrick has said about the infrequency of cerebral hemorrhage at night. It has been my custom, in the course of my teaching, to refer to this as one of the differential points between cerebral hemorrhage and thrombosis. The latter occurs with diseased blood vessels and low blood pressure, while the hemorrhage occurs with weak blood vessels and high pressure. Gowers has also called attention to the fact that the state of the pulse, as indicating low blood pressure, points to thrombosis, while a high tension pulse—not necessarily a high rate—indicates hemorrhage.

I regard this as an exceedingly important point to take note of—both in diagnosis and treatment.

Dr. John Punton, Kansas City—Dr. Pearce, in his paper, failed to mention coma as an important symptom of cerebral hemorrhage. The longer the coma lasts, the less are the patient's chances of recovery. A study of this symptom has also an important bearing upon the surgical aspect of cerebral hemorrhage. The symptoms of cerebral hemorrhage vary considerably, depending upon the seat of the lesion; the diagnosis in some cases being very difficult, while in others quite easy. Another point to which I desire to call attention is that cerebral hemorrhage now occurs much earlier in life than formerly. The text-books teach that it is a disease of beyond middle life, usually coming on between 50 and 60. I am rather inclined to think that nowadays it not infrequently is seen during the active period of life. I can recall several cases in patients between the age of 30 and 35 years.

Dr. W. A. Jones, Minneapolis—I had hoped that Dr. Pearce would enter more into detail regarding the differential diagnosis between the three conditions of cerebral hemorrhage, embolism and thrombosis. The most puzzling cases to me are those of diseased arteries, without hemorrhage. In many such I have been led to suspect hemorrhage, only to find a hardened, thick blood vessel or an obstructed blood vessel. I agree with Dr. Punton that cerebral hemorrhage is now observed more frequently early in life. Thrombosis, on the contrary, is more common in later life. The treatment of the three conditions is decidedly different, and for that reason we should endeavor to make the differential diagnosis.

Dr. E. G. Carpenter, Columbus—A number of cases of ingravescent hemorrhage have come under my observation during the past year, and I hoped to hear more on that subject. I have in mind particularly one case where the postmortem revealed a very interesting state of affairs: The patient was a young man, about 30, in excellent circumstances. He grew dissipated in his habits and in the course of a debauch he fell, receiving a severe injury of the head. He was brought to our institution, in Columbus, for inebriety, and kept under careful observation. He developed no particular symptoms at first, but on the tenth day after the receipt of his injury he died suddenly with all the characteristic symptoms of apoplexy. During the three days preceding his death it had been noticed that he was apathetic and drowsy. At the autopsy the entire right hemisphere was found covered with a large thick clot. This case illustrates the fact that in some instances of the ingravescent form of cerebral hemorrhage the tissues may become very tolerant to the presence of a foreign body, and the hemorrhage may grow to large dimensions without causing many or severe symptoms.

Dr. Pearce, in reply—Most of the cases of cerebral hemorrhage that have come under my observation have occurred at night. In the general symptomatology in which I made the statement of the nocturnal attack prevailing, I included both thrombosis and embolism, which no one will doubt occur more frequently at night. As regards the neuronic theory, I agree with Dr. Patrick that it has not been proven. On the other hand, neither has it been disproven, and I am still inclined to cling to a theory which is fascinating and which explains, in an apparently reasonable manner, the mechanism of some normal and abnormal brain functions.

DANGEROUS HEMORRHAGE AFTER REMOVAL OF ENLARGED TONSILS AND ADENOIDS WITH THE REPORT OF A CASE.

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April 30, 1901, at 5 p.m., I operated, at the Worcester City Hospital, upon Josephine H., a child of 5 years, removing large tonsils and an adenoid growth. The operation was done under ether anesthesia, which at no time was profound, but, on the other hand, just enough was given to keep her beyond the border line of consciousness. The tonsils were removed first and when the hemorrhage, which was rather profuse, but not alarming, had ceased the adenoid growth was removed. The tonsils were removed with a guillotine and the adenoid with forceps and curette. The bleeding promptly stopped, the recovery from the anesthesia was satisfactory and I left the hospital with a sense of relief that an operation that had caused me some anxiety was successfully completed.

At 7 o'clock I received an urgent call to come to the hospital. Much nausea had followed the ether, and previous to my coming the child had vomited a fluid resembling fresh blood at five different times, and about two ounces each time. She had been very thirsty and begged for ice constantly. She had also been very restless and tossed from one part of the bed to another, throwing her arms about and kicking off the bedcloths. The loss of blood, great thirst, restlessness, sighing respiration and failing pulse alarmed the attendants and I was called.

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At 11, the pulse was 180 and a faint flickering could be felt at the wrist. At midnight, however, the pulse had not continued to improve, it being 184, and it was decided to administer a salt solution subcutaneously. The solution was made of common salt and water by adding to a pint of water, made sterile by boiling, a dram of salt. This was reboiled to prevent the deposit of a sediment. The solution was then placed in a glass bottle, with a cotton stopper, and again sterilized in the oven. The apparatus for administration consisted of a glass cylinder holding eight ounces, drawn to a tube at its lower end, to which was attached a rubber tube; to the distal end of this was attached the hypodermic needle. To keep the fluid at the proper temperature the rubber tube was run through a glass tube around which was laid a water-bag filled with hot water. The fluid was forced into the tissues by gravity.

Six ounces of the salt solution were injected under the skin, inside the inferior angle of the scapula, and in half an hour it was entirely absorbed. The effect on the pulse was striking. At 1 a.m. it was plainly counted at the wrist, beating at 160. Besides this injection, Jacobi's mixture was started at midnight. This was given by mouth and consisted of

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It was given in doses of ʒii every fifteen minutes, *which meant a teaspoonful of brandy every two hours.*

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The child was kept in the hospital for about a week. She was fed with great care and very closely watched and made steady progress to recovery.

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The last course, the one contrary to my usual practice and against my judgment, is the one I pursued.

Ingravescent hemorrhage and pachymeningitis interna hæmorrhagica have some points in common which are confusing in diagnosis. In both there is apt to be no loss of consciousness; although in the former there is less likelihood of rise of temperature, while in the latter there is elevation of the temperature curve to 102 or 103 or more degrees F., but of irregular type and associated with rather severe pain in the head. Then the spasticity which would occur from cortical irritation from pachymeningitis, would be the positive point as against hemorrhage in the external capsule.

Another differential point in diagnosis between ingravescent hemorrhage and subcortical tumor in the motor area, is to be made in some cases. The history of the case would be important as bearing upon this subject, as well as the examination of the eye grounds where optic neuritis would be present and of high grade in the case of tumor; it almost never being present in the slow hemorrhage, since the neuritis would not have time to develop at the moment of examination.

Hemorrhage into the crus cerebri would be told by the irregularity of symptoms in the first place, and secondly from the alternate hemiplegia following and generally associated with some sensory loss on the hemiplegia side and accompanied by paralysis of the oculomotor nerve on the same side.

Hemorrhage into the pons is very difficult of determination but would be told by critical examination for a crossed paralysis affecting the face on the same side, as hemiplegia in the case of hemorrhage into the upper portion of the oblongata; or secondly, of the face on the same side, if the hemorrhage were situated in the lower portion of the pons. The association of urgent cardiac and respiratory symptoms would be indicative of hemorrhage into the pons. I presented the rare specimen of a case of hemorrhage bilaterally into the pons and into one crus cerebri, this winter before the Pathological Society of Philadelphia, and which I will have the pleasure of showing to the Section. The mixed symptoms resultant from such a lesion, it would seem to me, make diagnosis quite impossible.

Hemorrhage into the spinal cord high up, would be apt to occur in specific cases and the Brown-Séquard syndrome would follow. Hemorrhage into the membranes into the cord would be associated with large paresthesia or pain distributed to the periphery of the nerves from the segment of the cord encroached upon, and in my experience, not the most difficult for diagnosis; as shown in the case seen with Professor Rodman, this winter, where diagnosis has been confirmed, I take it, by the constant improvement in the case through electric treatment, massage and rest, to quite complete restoration of the paraplegia sequent upon pressure in the lumbar cord, due to a fall down an elevator shaft. Trauma, too, is apt to be a point gotten in the history of such cases. But it is not my province to go in for discussion of disease of the spinal cord.

In the above cursory way, the writer has attempted to give the salient features that have come to his observation for actual determination of one of the most difficult neural affections within the cranium or spinal canal to positively differentiate.

DISCUSSION.

Dr. Hugh T. Patrick, Chicago—I simply wish to say a word in reference to the mystery as to why hemorrhage of the brain comes with peculiar frequency at night, while the patient is asleep and there is no increase of arterial tension. Like the old question, why is it that a vessel nearly filled with water into which a fish is introduced weighs just the same as it did before, the explanation is, that it does not. Cerebral hemorrhage does not occur with peculiar frequency during the night or while people are asleep. That was a theory which was asserted prematurely and it has been disproven a number of times. The statistics gathered by Dana and others show that cerebral hemorrhage does not occur with especial frequency at night. Thrombosis, on the other hand, occurs more frequently at night. I will not take up any more time by discussing the theory of neuron contraction, to which Dr. Pearce referred, as it would be a pure waste of cerebral activity. The theory of neuron contraction never had a single solitary basis upon which to rest.

Dr. F. W. Langdon, Cincinnati—I indorse what Dr. Patrick has said about the infrequency of cerebral hemorrhage at night. It has been my custom, in the course of my teaching, to refer to this as one of the differential points between cerebral hemorrhage and thrombosis. The latter occurs with diseased blood vessels and low blood pressure, while the hemorrhage occurs with weak blood vessels and high pressure. Gowers has also called attention to the fact that the state of the pulse, as indicating low blood pressure, points to thrombosis, while a high tension pulse—not necessarily a high rate—indicates hemorrhage.

I regard this as an exceedingly important point to take note of—both in diagnosis and treatment.

Dr. John Punton, Kansas City—Dr. Pearce, in his paper, failed to mention coma as an important symptom of cerebral hemorrhage. The longer the coma lasts, the less are the patient's chances of recovery. A study of this symptom has also an important bearing upon the surgical aspect of cerebral hemorrhage. The symptoms of cerebral hemorrhage vary considerably, depending upon the seat of the lesion; the diagnosis in some cases being very difficult, while in others quite easy. Another point to which I desire to call attention is that cerebral hemorrhage now occurs much earlier in life than formerly. The text-books teach that it is a disease of beyond middle life, usually coming on between 50 and 60. I am rather inclined to think that nowadays it not infrequently is seen during the active period of life. I can recall several cases in patients between the age of 30 and 35 years.

Dr. W. A. Jones, Minneapolis—I had hoped that Dr. Pearce would enter more into detail regarding the differential diagnosis between the three conditions of cerebral hemorrhage, embolism and thrombosis. The most puzzling cases to me are those of diseased arteries, without hemorrhage. In many such I have been led to suspect hemorrhage, only to find a hardened, thick blood vessel or an obstructed blood vessel. I agree with Dr. Punton that cerebral hemorrhage is now observed more frequently early in life. Thrombosis, on the contrary, is more common in later life. The treatment of the three conditions is decidedly different, and for that reason we should endeavor to make the differential diagnosis.

Dr. E. G. Carpenter, Columbus—A number of cases of ingravescent hemorrhage have come under my observation during the past year, and I hoped to hear more on that subject. I have in mind particularly one case where the postmortem revealed a very interesting state of affairs: The patient was a young man, about 30, in excellent circumstances. He grew dissipated in his habits and in the course of a debauch he fell. receiving a severe injury of the head. He was brought to our institution, in Columbus, for inebriety, and kept under careful observation. He developed no particular symptoms at first. but on the tenth day after the receipt of his injury he died suddenly with all the characteristic symptoms of apoplexy. During the three days preceding his death it had been noticed that he was apathetic and drowsy. At the autopsy the entire right hemisphere was found covered with a large thick clot. This case illustrates the fact that in some instances of the ingravescent form of cerebral hemorrhage the tissues may become very tolerant to the presence of a foreign body, and the hemorrhage may grow to large dimensions without causing many or severe symptoms.

Dr. Pearce, in reply—Most of the cases of cerebral hemorrhage that have come under my observation have occurred at night. In the general symptomatology in which I made the statement of the nocturnal attack prevailing, I included both thrombosis and embolism, which no one will doubt occur more frequently at night. As regards the neuronic theory, I agree with Dr. Patrick that it has not been proven. On the other hand, neither has it been disproven, and I am still inclined to cling to a theory which is fascinating and which explains, in an apparently reasonable manner, the mechanism of some normal and abnormal brain functions.

DANGEROUS HEMORRHAGE AFTER REMOVAL OF ENLARGED TONSILS AND ADENOIDS WITH THE REPORT OF A CASE.

A. C. GETCHELL, M.D.
WORCESTER, MASS.

April 30, 1901, at 5 p.m., I operated, at the Worcester City Hospital, upon Josephine H., a child of 5 years, removing large tonsils and an adenoid growth. The operation was done under ether anesthesia, which at no time was profound, but, on the other hand, just enough was given to keep her beyond the border line of consciousness. The tonsils were removed first and when the hemorrhage, which was rather profuse, but not alarming, had ceased the adenoid growth was removed. The tonsils were removed with a guillotine and the adenoid with forceps and curette. The bleeding promptly stopped, the recovery from the anesthesia was satisfactory and I left the hospital with a sense of relief that an operation that had caused me some anxiety was successfully completed.

At 7 o'clock I received an urgent call to come to the hospital. Much nausea had followed the ether, and previous to my coming the child had vomited a fluid resembling fresh blood at five different times, and about two ounces each time. She had been very thirsty and begged for ice constantly. She had also been very restless and tossed from one part of the bed to another, throwing her arms about and kicking off the bedcloths. The loss of blood, great thirst, restlessness, sighing respiration and failing pulse alarmed the attendants and I was called.

When I saw her bleeding had stopped. The throat had been examined, but no bleeding points were found, and I did not disturb her for further examination. She was greatly bleached, her lips were colorless, ears waxy and pulse very rapid and thready. To insure freedom from disturbing influences, she was put into a separate room under the care of a special nurse. At 8.30, from two to three ounces of dark-brown vomitus, mixed with much blood-clot, was emitted. This did not have the bright character of the former vomitus. The thirst was now intense. At 9, the pulse was 160, the restlessness had increased and delirium had developed, the hallucination being a glass of water on the floor. At 10 o'clock, no radial pulse could be felt, but, with the stethoscope, the heart-beats were found to be 192 per minute. The panting respiration was often interrupted by sighs and the child had lost all interest in her surroundings, although the restlessness was as marked as ever. At this time an enema was given, consisting of the following:

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In such a case four courses suggest themselves: 1. Postpone operation and endeavor to get the child in better condition. 2. Remove the tonsils without anesthetic, paying no attention to the adenoid. 3. Remove the tonsils under an anesthetic and if the bleeding is slight and an adenoid is present remove it also. 4. Do the whole operation, even if a considerable amount of blood is lost in the tonsillotomy.

The last course, the one contrary to my usual practice and against my judgment, is the one I pursued.

I did it because the child was there and the parents expected the operation to be done, and, furthermore, because it was evident that the child needed the help that would come from the removal of very large tonsils. The adenoid was removed because I felt that the child might not be brought for a subsequent operation, and, therefore, this operation would be incomplete; to her disadvantage and my discredit.

However, I followed the operation through with much caution, both as to the use of the anesthetic and the removal of the growths. The hemorrhage from the tonsillotomies was profuse, but did not alarm me. I had seen much severer ones with no untoward aftereffect and I did not feel that the risk was great; but I reckoned without my host.

The operative hemorrhage alone probably would not have produced alarming symptoms, neither would the poor recovery from ether, but she was of such a frail constitution that the weakness brought about by both these causes induced the post-operative hemorrhage, which was serious and bade fair to be fatal. One or two of the obstacles to recovery she might have overcome, but the three were too much for her, and it seems she surely would have died but for the prompt and skilful treatment she received. She had all the advantages of a well-equipped institution, and particularly of the services of a peculiarly capable house physician, Dr. W. W. McKibben, to whom I am indebted for many of these notes.

This experience confirms me in the conviction—that under the age of 5 years one should do the complete operation for removal of tonsils and adenoids with a great deal of caution, and where the tonsils are very large and the child is delicate and anemic, the complete operation under ether should not be attempted. The tonsils can and should be removed, but this can be done with no anesthesia or with a few whiffs of chloroform. The incompleteness of the operation should be explained to the parents and a future removal of the adenoid growth, under an anesthetic, should be considered and planned. Indeed, after the gain in health that usually follows the removal of the tonsils this becomes a safe proceeding.

In the consideration of this topic it would be proper to discuss the methods of operating that have been proposed to minimize hemorrhage. Some of them I have tried, others have promised such slight advantages that I have not tried them, and I will not take time for other enumeration.

For young children, I find no instrument is so generally useful as the tonsillotome for the tonsils, and the forceps, curette and finger-nail for the removal of adenoid growths. The choice is to be exercised not so much in the selection of instruments and methods, as in careful observation of the patient and the selection of proper time and conditions for the operation.

NOTES ON ONE HUNDRED AND FIFTY CASES OF SMALLPOX IN PRIVATE PRACTICE.

ALBERT SOILAND, M.D.
LONG LEAF, LA.

There exists some diversity of opinion among members of our profession regarding the true nature of the disease which has been rather epidemic in some sections of our country during the last few years, and which has been termed by the various writers variola, modified smallpox, pseudo-smallpox, varicella, Cuban itch, elephant itch, Philippine rash, etc. It is true that the great majority of physicians recognize this disease as genuine smallpox; yet there are a number of careful observers who will not admit that such is the case, but who insist that this is a new unclassified disease; others again hold that it is an unusually severe type of chickenpox.

During the past twelve months I have had the opportunity to observe and treat 150 cases of this disease, as they occurred in private practice, principally among the negroes, in Central Louisiana, and I do not hesitate to state that these cases were genuine smallpox and could not be confounded with any other disease. I also saw a number of cases of variola in Northern Mexico three years ago, just before the disease became general throughout the United States, and these cases were identical in type with my recent ones.

Clinically, the course of my cases followed that laid down in the text-books to a large extent, with the exception that the secondary fever was low in most of the patients. It was, however, high in a number and altogether absent in a few of the extremely mild cases.

The onset was usually sudden, with high temperature, gastric disturbances and pains in the back. This last symptom proved to be quite a diagnostic point in my cases, as it would not yield to medication before the eruption appeared. The period of eruption followed also the typical course, papule, vesicle, pustule and crust, the vesicles becoming distinctly umbilicated in nearly every case, and the four stages occurring in cyclic order; not as in varicella where all stages of eruption may be found at one time. In 34 of my cases the eruption was confluent, no part of the body being exempt from attack. Here the pustules coalesced, forming large patches over the entire body, making a picture horrible to behold, and a condition almost unbearable for the poor sufferers, who can not be comfortable in any position.

During desquamation, which is prolonged here owing to the deepest structures of skin being involved, large casts are thrown off from the four extremities. This is a condition which never exists in varicella as far as I can learn and I have never heard of the eruption in varicella appearing upon the plantar surface of the feet and the palmar surface of the hands. There was delirium present in all these severe cases.

The course of the disease ranged from three to eight weeks, according to the intensity of eruption and the amount of constitutional disturbance [illegible] case. It is true that a number of [illegible] suffered no further inconvenience than that occasioned by the amount of eruption present, and felt fairly at ease after eruption appeared. In all of the confluent and in a few of the discrete cases, the prostration was very marked, and as stated, the disease followed the typical orthodox course. It was impossible to determine by the prodomal symptoms whether a discrete or confluent case would follow, as in a number of instances the most severe prodromes would be followed by a mild eruption and vice versa. The disease seemed to have a selective preference for the negroes, probably on account of their careless personal hygiene, although a number of whites were also attacked.

One of my cases proved fatal and that was the only one with a hemorrhagic type of the disease I have seen. This was a young mulatto about 25 years old who had suffered from arrhythmia and a cardiac neurosis for several years. He contracted smallpox a few days after arriving in our settlement, and died on the fourth morning after onset. In his case the hemorrhage took place in the papules before they were mature, the skin resembling that of erysipelas, being tense and shiny.

As long as our knowledge of the specific poison of smallpox is lacking, we can only direct our attention to the treatment of symptoms, and prophylaxis. In my cases I practiced isolation as much as possible, used the coal tar derivative, acetanilid, citrophen, thermol, etc., for the early symptoms with varying success. For the constitutional disturbances a morning saline and quinia and strychnia t. i. d., together with milk and soft-food diet were given. Calcium sulphid, which has been lately recommended as a specific, yielded very indifferent results, although faithfully used in about one-half of the cases. In fact, the only two cases of general furunculosis which developed after patients had recovered from the effects of the smallpox eruption occurred where this drug had been exhibited.

For the eruption various washes and ointments were applied, as carbolic acid and bichlorid solutions, boric acid, glycerin and ichthyol in different proportions. That which gave most satisfaction was a 5 per cent. lotion of liquor carbonis detergens in water; the skin surface was kept moist with it continually. This seemed to control the secondary fever and render the eruption less irritating.

The so-called characteristic odor of variola becomes very marked as pustulation advances, and is, of course, due to the necrotic processes in the skin. This unpleasant odor is masked by keeping body moistened with the detergent solution named or carbolic acid.

The one point which I wish to emphasize, however, and which I think of paramount importance, is the fact that not one of the cases in my district had been vaccinated, and that not one person who was successfully vaccinated contracted the disease. The significance of this statement will be realized when we consider that these people were very careless about exposing themselves, and would mingle daily with those who were already stricken, and when not actually watched, would spend some time visiting houses where probably five or six patients were in bed with smallpox. About 350 persons in all were vaccinated, and not a single one of these contracted the disease, although they were all exposed at different times.

In this connection one peculiarity was noticed which happened altogether too frequently to be due to mere chance. When one member of a family came down with smallpox I would immediately vaccinate the other members, one or two of whom would not react, and these would subsequently develop smallpox, but at a comparatively late period. Often in a family of five or six the father would take sick first. If the others had not already been vaccinated they would then submit to it—usually under protest—and within a week two or three would respond favorably, but one or two would fail to take. I would then revaccinate these as often as practicable, but would get no reaction. Now, after several weeks, and when the other members of the family had recovered, those who had failed to react to the several vaccinations would invariably come down with smallpox. I can not say whether the vaccinations in these instances retarded the outbreak of the disease, or whether the personal resistance against it was the factor.

A SATISFACTORY OPERATION FOR CERTAIN CASES OF RETROVERSION OF THE UTERUS.

J. CLARENCE WEBSTER, M.D.
Professor of Obstetrics and Gynecology, Rush Medical College, affiliated with the University of Chicago; Obstetrician and Gynecologist, Presbyterian Hospital.
CHICAGO.

During the past year I have carried out the following procedure in a number of cases where operative interference has been deemed advisable for retroversion of the uterus.

The patient being in the Trendelenburg position, the abdomen is opened, adhesions are separated and other pathologic conditions, which may be present, attended to. The fundus of the uterus is elevated and pushed forward. A small hole is then made through the broad ligament on one side under the utero-ovarian ligament near the uterus. Through it a pair of forceps is passed from behind in order to grasp the round ligament about an inch from its uterine end. The latter is then pulled through the broad ligament in a double fold. It is carried across the back of the uterus a short distance above the utero-sacral ligaments and is then stitched in this position with chromic catgut. A similar procedure is carried out on the other side, the second round ligament being stitched to the back of the uterus above or below the first one or crossing it. The amount of overlapping of the round ligaments depends upon their length and laxity.

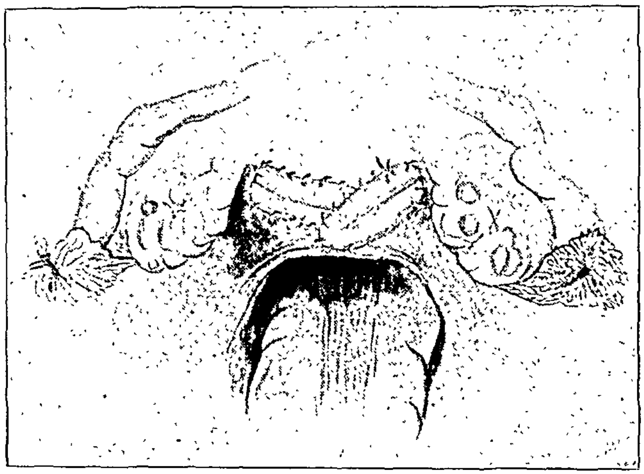

Diagram representing the round ligaments doubled up, drawn through the broad ligaments and stitched to the posterior surface of the uterus above the utero-sacral ligaments.

Each ligament is also stitched to the edge of the hole in the broad ligament. As a result of this operation, the round ligaments are much shortened and through their new attachment to the posterior and lower part of the uterus, act both in elevating the uterus as a whole and in preventing it from returning to its retroverted position. The ovaries are also elevated. No raw surface is produced on which adhesions can form. No new ligament is formed to act as a possible cause of intestinal obstruction and of trouble in pregnancy and labor. The normal range of uterine movements is not materially altered. There is no possibility of any interference with pregnancy and labor.

The operation can be performed equally well by vaginal section. It seems, therefore, to me to be more advantageous than the other operative procedures commonly employed in the treatment of retroversion of the uterus.

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ARE ATOMS REAL ENTITIES?

At the opening of the 71st annual session of the British Association for the Advancement of Science, which met in Glasgow last September, President Rücker of the University of London devoted his address to an interesting discussion of the present atomic theory of the constitution of matter. Through the century just ended, a century of wonderful progress in chemical and physical knowledge, three grand conceptions have dominated the so-called physical sciences as distinct from the biological, 1, that matter is made up of separate particles—Dalton's fruitful and comprehensive theory of the existence of atoms; 2, that heat is due to movement among these particles, and 3, that there is an all-pervading subtle medium called ether. While these conceptions have grown in strength with each succeeding decade, they have not been blindly accepted without question. Especially during recent years have voices been raised against their universal acceptance, and the opinion has been expressed that the atomic theory and the theory of the existence of ether have served their purpose. It may be freely admitted that the view that matter is consituted by aggregations of separate particles has been useful in helping us to get some sort of understanding of the properties of matter in the past, but we are urged not to forget that these units are simply speculative and not objective and real. The terms "atoms" and "ether," useful and convenient fictions, answer the purpose of working drawings which though different from material reality yet help us to gain an insight into its arrangement and its properties, and to codify observed facts and laws. But the working model is probably very much unlike the real thing.

At the present time chemistry teaches the existence of about 100 different elemental forms of matter. Their weight-relationships to one another are, however, suggestively near multiples of the same number, and this resemblance in relative weight coincides with other resemblances, so that chemistry is pervaded by an indistinct belief that there is a common element which is the substratum of all kinds of matter. This dream that matter of all kinds will some day prove to be fundamentally the same has survived many shocks. Atmospheric air, carbonic dioxid and other mixtures and compounds may be broken up into several distinct, tangible entities, and the question is, can these gases be broken up further into molecules and atoms whose very motion we may be able to trace by actual, tangible proof? Of course, matter in bulk appears continuous, but how are we to explain the phenomena of diffusion and expansion and heat if all substances are perfectly uniform in all their parts? Air diffuses into water, and water penetrates into air, and the rights of way for the one through the other apparently exist. Rücker cites a recent classical experiment by Sir W. Roberts Austen, who placed pieces of gold and lead in contact at a temperature of 18 C. "After four years the gold had traveled into the lead to such an extent that not only were the two metals united, but, on analysis, appreciable quantities of the gold were detected even at a distance of more than 5 millimeters from the common surface, while within a distance of three-quarters of a millimeter from the surface gold had penetrated into the lead to the extent of 1 oz. 6 dwt. per ton." A simple, satisfactory explanation of such phenomena is found in the conception that matter consists of separate particles in motion, "which can penetrate into the spaces between the corresponding parts of surrounding bodies." There seems to be no limit to the expansion of matter, such as a gas, but it is certainly inconceivable that a continous material present in every part of a space can also be present in every part of a space a million times as great. Different kinds of light all travel at the same speed in interplanetary space, but at different rates in matter—a fact also explained by the coarse-grainedness of matter. Being forced to accept the particulate nature of matter what if anything do we know of the properties of these particles! What we do know of the properties of matter we have learned through the forces acting on our organism. These properties are of the aggregate of particles composing matter and as long as we are unable to detach a molecule or an atom we are not able to learn anything of its properties in isolation. Emerson has said in his essay on farming that "you can not detach an atom from its holdings, or strip off from it the electricity, gravitation, chemic affinity, or the relation to heat and light, and leave the atom bare," and such seems to be the case even to-day.

The question of the existence of molecules and atoms may be regarded as settled, the outstanding difficulties relating wholly to the nature and constitution of the granules. It has been said that every great advance in chemistry in the last 90 years finds its interpretation in Dalton's theory of atoms, and Rücker emphasizes strongly the fact that the atomic theory imparts a unity to all physical science. He likens a crowd of molecules to a fog and recounts the experiments of Wilson and J. J. Thomson in causing vapor to condense upon the molecules of highly rarefied gas until they become magnified into a visible mist. Fine dust facilitates greatly the production of fog, and these investigators show that electrified particles may act in a similar manner as nuclei for the condensation of vapor. Such electrified particles result from the breaking up of molecules into ions. Indeed, the atomic theory has received strong support from the recent studies of electrolytic dissociation. J. J. Thomson's recent work on cathode-ray phenomena has led him to results that indicate even the divisibility of atoms into negatively electrified corpuscles.[1]

PROGNOSIS.

The soothsayers of old were looked upon with awe when by flight of birds, by falling star or by weird incantations they foretold the future. When to-day by examination of the tongue or pulse, by throwing a light into the eye so that he may inspect the eye-grounds, by listening to the working of the lung or heart, or by the study of secretions in the test-tube and under the microscope, the physician pronounces upon the fate of his patient, the same feeling of mystery comes over the listener, and the same unconscious homage is done the superior being who can peer into the future as was accorded the soothsayer. Much more credit is often given to a physician for a correct prognosis than for the acute diagnosis or skilled treatment that underlies his statement as to the course of the disease and its termination. He predicts that on a certain day the crisis will occur or the rash will disappear, or convulsions may take place. With wonder the laity see what was foretold come to pass and their amazement is great and the physician is credited with insight almost supernatural. Even though the doctor in his helpless ignorance may say that he can not tell what the result will be, that the patient may recover and live to a ripe old age or may die within twenty-four hours, he is accorded, perhaps unmerited, praise for his ability and the question is discussed as to how the doctor could tell such and such would happen.

The ability to make a prognosis depends on no mysterious or occult power, on no supernatural gift, but on study and experience. The natural history of disease, the effect of treatment, and an accurate knowledge of the existing conditions present in the given case must be known. This enables the physician to take a comprehensive view of the case and to hazard something more than a shrewd guess. A prognosis may be based largely upon an accurate knowledge of statistics, yet each case has to be considered by itself, the surroundings of the patient, the virulence of the disease process, the resisting power of the invalid, his individual peculiarities, and the condition of all the vital organs. It is here that the physician of broad education, of wide experience and of shrewd observation is often enabled to foretell the future to the upsetting of statistical tables and the amazement of the friends of the patient, and often of other physicians.

While the ability to make an accurate prognosis depends to a large extent upon actual experience, it must be remembered that this power is not entirely a natural gift, or a mysterious power granted to the few, but that it is just as much the result of reading, study, observation at the bedside and in the deadhouse, and of logical reasoning as is a scientific diagnosis or rational therapy.

VACCINATION AND SMALLPOX.

The *Popular Science Monthly* for October contains an article by Professor J. Nevins Hyde on the late or still-present smallpox epidemic in this country. He shows first how massing together of people, who thus lose their customary adaptation to environment, creates a peril and that this is especially accentuated when the assemblage is the form of camps and in time of war. War and pestilence are twin brothers, but they do not always appear side by side. More often pestilence follows war, and he illustrates this from our own history—the skin diseases so abundant after the Revolution, the cholera epidemic following the Mexican war, and the prevalence of typho-malarial fevers after the Civil war. Our late Spanish war is no exception; it has introduced into our country an epidemic of smallpox sweeping from the Eastern and Southern portion to the Pacific and involving all sorts and conditions of men. It came also in a form that has troubled the diagnostician and for this reason its range has been the more extended, the mildness of the malady in most cases leading to neglect of precautions and consequent spread of the contagion.

The cause of the mildness of the disease is explained by Hyde by the immunity conferred by vaccination through generations, an immunity conferred even in unvaccinated by inheritance, which he thinks must be admitted, not merely as a logical sequence of laboratory experiments, but from clinical facts. "Not the sins alone of the fathers, but some of the safeguards, are visited upon the children." The germs were brought from the Spanish hotbeds of smallpox by our vaccinated soldiers and were thus attenuated in virulence. It has been largely an epidemic of modified varioloid, but capable of producing in virgin soil the typical variola, as has been shown in many instances. Vaccination, however, while probably as near perfection as a preventive of smallpox as any human means can be, is still not absolutely perfect, and its failures show most plainly in epidemics when those ordinarily resistant to vaccinia become amenable and vaccination may even apparently succeed after or during the developed smallpox itself.

These exceptional facts, however, prove nothing against the rule, and the anti-vaccinationists overlook the signal victories over smallpox of which the general character of the present epidemic is itself an evidence. Hyde shows that, were it necessary to appeal to statistics at this late day to prove the value of vaccination, the experience of Porto Rico alone, where smallpox has been practically stamped out in two years, would be sufficient. She "bombarded us with a filth germ and in revenge we made her clean." His article concludes with the demand that "vaccination should be the seal on the passport of entrance to the public schools, to the voter's booth, to the box of the juryman and to every position of duty, privilege, profit or honor in the gift of either the State or the Nation.

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[1] See Journal, June 8, 1901, p. 1630.

ASTONISHING IF TRUE.

In an editorial notice of an article by Kretzner on the pathology of the Jew, the *British Medical Journal* makes the following astonishing quotation, apparently from Benedikt: "At the present day among orthodox Jews every female is condemned from nativity till the menopause to an uninterrupted series of pregnancies, parturitions and lactations." This is important if true. We have heard much of the remarkable qualities of the Jewish race, but its precocity has never so impressed us before. It is so common for us to see in British publications remarks on our own deficiencies in the use of the English language that we can not think they do not know how to use it over there at its source, or we would believe the editor of our contemporary had made a mistake.

THE TEACHING OF PHYSICAL THERAPEUTICS.

The time is past when the treatment of disease is comprised in the administration of drugs, and to-day more than ever it is recognized that other forces of nature may be so employed as to render valuable therapeutic aid. If evidence of this fact were wanting it could be found in the circumstances that there are at present being published in English and in German, systems of therapeutics in which physical agents especially are discussed, such as heat, light, water, air, electricity, massage, rest, diet, etc. These are subjects, however, to which scant attention has been given in the past in the medical schools and by reason of their great importance it would seem that the time is now ripe for their inclusion in the medical curriculum.

YELLOW FEVER INVESTIGATION BY THE MARINE-HOSPITAL SERVICE.

In a letter to the Secretary of the Treasury, Surgeon General Wyman of the Marine-Hospital Service proposes a plan for the organization of a yellow fever institute under the auspices of his bureau. The members are to be the officers of the Marine-Hospital Service and others specially qualified, who may be invited to assist. The plan includes four sections, each having special topics for its consideration, and each section will be under the direction of one of the bureau medical officers who, with the surgeon general, the director of the hygienic laboratory and a secretary, will constitute a supervising body. There will be bulletins published from time to time as material is afforded by the investigations and "it is believed that the organization will meet with a degree of success warranting its existence." The prime motive for the proposed organization appears to be the demands by commercial interests for the modification of the quarantine laws. The necessity of the regulations heretofore in force against yellow fever infection has been questioned since the publication of the results of the studies of the army surgeons, and the bureau wishes to make a complete study of the subject. Medical men generally are inclined to accept the findings of Drs. Reed and Carroll and their co-workers as final, but there may be a few questions still open as regards the limits of usefulness of quarantine measures. We do not understand that the proposed studies are intended in any way to conflict with the work of other investigators, but rather to confirm them and to definitely establish the practical measures needed to exclude yellow fever from our shores. There is also a broad field of inquiry in regard to yellow fever that is yet to be satisfactorily worked. It is to be hoped that the proposed institute will occupy it profitably.

THE DISPENSARY EVIL.

The Pennsylvania State Medical Society proposes to attack the dispensary abuse in a new way. It asks the state legislature to pass a law requiring all persons seeking aid at dispensaries and other charitable institutions to record their names and addresses over their own signatures, or marks if unable to write, in a book kept for the purpose which shall be open for inspection, and to inflict a penalty upon those who fraudulently receive aid. The plan is certainly simple enough and if made universal by legislative act ought to be effective. Of course, everything would depend upon its faithful execution, and we fear that in the competition for clinical material there may be some chances of failure in this respect. Everything really depends upon the dispensary authorities and to check any possible laches on their part it should be the business of the medical societies on behalf of the profession to inspect the books and see that they do their duty. If this were done by some responsible agent and a sufficient penalty enforced, the charities could do better work and not be, as they sometimes now are, an imposition on the long-suffering general practitioners of our great centers of population. The medical colleges, especially those that might well be spared, would probably have some of their clinics diminished, but the profession as a whole would be better off. It is not the altruism of us as a whole, but the egoism of a few that keeps up these abuses.

LAXITY IN PENSION EXAMINERS.

The Commissioner of Pensions recently sent out to all examining pension boards a circular-letter calling attention to certain abuses. He sent his letters broadcast to avoid laying open to personal attacks those particular boards he had in mind. It appears that there has been in some quarters a serious carelessness, to say the least; twenty applications for example made at once from one section of the country were all certified as cases of heart disease. This aroused suspicion and special examinations by disinterested physicians ordered by the commissioner revealed no heart disease in any of the cases. Other similar experiences led to the dismissal of certain boards and the issuance of this letter. The public generally has a conviction that there is a vast amount of fraud in the pension business, and the publication of such facts as these confirm it. It seems that there are members of our profession who, through mistaken sentimentality or something else, will return a false report or acquiesce without personal attention to the cases in an erroneous diagnosis of another physician or even to the mere statement of the claimant. It is not pleasant to have official evidence of such a fact, but there is no doubt such things have been done. The medical pension examiner who does not realize the fact that he is charged as a public officer to act honorably and honestly in his work, is, to use an expression that means much more than it says, no better than he should be. In short, he is aiding and abetting fraud. There has been either a laxity of professional honor and good morals in his case, or, what is nearly as bad, of competency to perform the work he swears to do.

VOLUNTEER HEALTH INSPECTORS.

The Chicago Health Department has utilized, during the past five years, the services of volunteer health inspectors whose duty was chiefly or largely to go out in the sections occupied by the poorer classes and give instructions as to hygienic needs. Their work was done especially in the hot midsummer months when the sanitary shortcomings are most serious in their effects, particularly to infants and young children. The results are best shown by the fact that the deaths of children under five years of age, since these inspections have been made, are 14,000 less in number than during the preceding five years. Over 10,000 homes have been inspected and many cases of contagious disease without medical attendance were found; a vast amount of insanitary conditions was corrected, largely by the householders themselves at the suggestion of the inspectors. So far as possible, anything like harsh police methods was avoided; the inspectors sought to win the confidence of the people, and generally with success. The inspections have been of special value during the past summer; they have insured better supplies of milk and ice, and have located the origin of many cases of typhoid and prevented other cases from the same. While the call for volunteers was instigated by a reduction of the working force of the department, it seems to have been readily responded to by the physicians of the city, and the results above stated are proofs that the efficiency of the city sanitary service has not been in any way impaired, but rather the contrary. To the physicians who volunteer it has the advantage of bringing them in contact with the people, of extending their acquaintance, and of serving to a certain extent as a clinical course in practical hygiene. What was at first an experiment has passed beyond the experimental stage and proven its value as a health-securing and life-saving procedure. The success in Chicago is a suggestion to other places that have as yet not adopted the plan.

CARELESS REPORTING.

As an example of careless reporting of experiments the following is worthy of mention. In the *British Medical Journal* of September 14 there appears an article giving some interesting observations on the penetration of the skin by the larva of the ankylostoma. The author says: "The experiment upon Dr. Looss is not convincing because he had, as I have said, previously suffered from the presence of ankylostoma in his intestines. He next experimented on a piece of skin removed from a fresh human corpse, and warmed to 99 F.; but this did not show any entry of embryos, possibly because the skin at once became too shriveled up. The next attempt was more successful. It was made upon the leg of a boy, aged 13 years, one hour before the limb was amputated. The leg was thoroughly washed with soap, nail brush, and water, then dried; and then one drop of water containing many larvæ was dropped on the skin and left to itself without being rubbed in. The drop spread out and dried up in ten minutes, and produced no redness of skin. The patient was not asked whether he felt a burning sensation. One hour after the drop came in contact with the leg the limb was amputated, and the suspected skin was at once removed from it and spread out with pins, gradually hardened in alcohol, and then embedded for section cutting, etc." There is nothing out of the way in this to a physician, because he would at once understand that there was some valid cause for the amputation and the opportunity was only utilized for an experiment that caused no suffering. But it should have been so stated. It is just such a report as would be taken up by our friends, the anti-vivisectionists, as evidence that this physician amputated the boy's leg to determine the pathologic question he was investigating. Even if they were aware that the amputation was for reasons not given, it would still probably come under their condemnation; but as it stands we expect to see it added to the list of horrible human vivisections in some future pamphlet attacking the inhuman doctors. One must be most particular how he writes in view of such possibilities.

POLITICS IN STATE INSTITUTIONS.

A beautiful example of the effects of political management of public charitable institutions was afforded recently at the Arkansas State Insane Hospital. The managing board passed a resolution ordering the superintendent to discharge all "alien" employes (nonvoters?) within ninety days and fill their places with Arkansans. The attendants thereupon joined in signing a memorial to the Governor asking for assurances as to the security of their positions. He replied that it was in the discretion of the superintendent to keep them till he could fill their places as directed. The result of this was that they quit work in a body and the Governor was obliged to make a personal visit to the institution and give them the desired assurance before they would return to their duties. It is not surprising that, with the examples about them, the strike should come to be the recourse of hospital attendants, and the serious consequences that might follow are readily imaginable by anyone familiar with asylums. Under the political management existing in many of our state institutions this may come to be one of the possible abuses. When the ideals of the governing authorities are no higher than to make these public charities simply a portion of the political spoil system, the lower officials will also be likely to neglect the humanitarian aspects of their work and we may have strikes for any possible cause, such as the discharge for cause of a popular fellow attendant or the engagement or retention of an unpopular one. When the state officers and managers look on these institutions simply as a means for their own political advancement, the subordinates are not likely to be very altruistic in their ideals or conduct. Hence, this gives rise to the scandals that are so frequent and that afford such welcome material for the sensational newspaper press. The medical profession owes it to itself to start a reform in this matter, to make politicians as well as soldiers respect the neutrality of hospitals. This is needed for our own credit, which has suffered and is still suffering from conditions as they have existed in the past and to a too great extent still exist. We can not begin the work of reform too soon.

LIMIT OSTEOPATHS TO WHAT THEY PROFESS.

Osteopathy, according to its founders and its advocates, is a system of treatment of disease without drugs, and they have had special laws passed in several states for their benefit embodying this idea. In these it is particularly specified that they are not authorized to administer drugs or to perform surgical operations. It has been urged in objection to these laws that they were only a subterfuge to evade the medical practice laws of the state and that the osteopaths would not confine themselves to the methods they profess to exclusively follow. That this is the case is revealed by the evidence in a recent suit in Denver, Colo., where a female professor of osteopathy sued for services rendered and it came out in the trial that she had not confined herself to osteopathic manipulations, but had prescribed medicines and administered treatment which only licensed physicians are entitled to give. The judge, while favoring osteopathy to the extent that he would not allow a non-suit on account of the plaintiff's lack of license, instructed the jury to find for the defendant if it believed she had been prescribing drugs. The case was decided for the defense and appealed by the plaintiff. Our confrères in Denver are, it is understood, taking up the matter vigorously, and a determined fight will be made to prevent this form of quackery from thriving on its illegitimate methods in the state. There is no doubt whatever that osteopathy laws are designed as entering wedges to open up a way to unlimited irregular practice. Consistency is not likely to be regarded by their advocates and beneficiaries; they care little as to the difference between their practice and their professions as long as they can successfully fool the public. While their use of drugs is practically self-stultification, it matters nothing to them provided the money comes in. The outcome of the fight in Colorado will be watched for with interest as the same matter will probably have to be fought over elsewhere. It is well to call the attention of the medical profession generally to the subject and to see that the osteopaths and others of their kind are not permitted to exceed their legal limitations. Every law that has been enacted for their benefit was passed through most positive assurances on their part that only manipulative procedures would be practiced by them in their treatment. Now let us be on guard to keep them to what they profess. If their treatment is limited to manipulation, osteopathy so-called will soon be a thing of the past, or exist only under its true designation, massage.

ENGLISH COMMENT ON THE M'KINLEY CASE.

While it has been a cause of satisfaction that the foreign newspapers, reflecting the sentiments of their readers, have spoken so highly of our late President, there is none the less gratification to us as medical men to read in the foreign medical journals so far received endorsements of the treatment of the case. The *Lancet* says:

> The favorable prognosis which was put forth at first was so far justified that in some cases recovery might have followed, but the issue hardly comes as a surprise. The injuries were terrible, the patient was no longer young, and the circumstances were such as to produce, even in a man of iron courage, the maximum of shock. If we may venture to criticise any portion of the treatment we feel inclined to suggest that the feeding by the mouth was somewhat in excess of that which is usually considered advisable. But while we say this we know that to the brilliant surgeons and experienced physicians around President McKinley's bed there may have been indications for the bolder treatment impossible to be disregarded. In short, on a careful review of the whole case we feel justified in saying that surgery did its best; the sad result is to be ascribed to the lack of vitality of the tissues themselves.

The *British Medical Journal's* comments do not contain even a hint at criticism, and the last part of the quotation below is certainly more pleasing reading than the harsh and uncalled-for criticism in an American medical weekly, referred to last week:

> A large bullet was discharged, with low velocity; instead of a clean wound the result of cleavage, there was a wide channel, with much surrounding bruising and laceration, and sloughing followed. There is no need to assign any influence to a supposed escape of pancreatic secretion or to a poisoned bullet. The mechanical conditions are ample to account for all the disturbance found. Much also seems to have been made in comment by the lay papers of the absence of healing described in the record of the necropsy. Such a lethargy on the part of wounds is, unfortunately, not an infrequent experience in abdominal surgery. In gastro-enterostomy for malignant disease of the pylorus, or in any short-circuiting operations performed in conditions of acute obstruction or of exhaustion resulting from malignant disease, complete absence of reparative power may be observed. One hears the pathologist say that the serous surfaces of the wound "fell apart" when examined, or that there was "no attempt at healing," and so forth. If the bruising of the stomach spread widely from the perforations made by the bullet, it is not idle to suppose that a local and coextensive "stunning," a complete cessation of activity, was also present. In such a condition healing is impossible.
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> We can only repeat, though perhaps with greater emphasis, as more is now known of the facts, what was said last week as to the conduct of the case. In such a catastrophe operation affords the only hope of relief, and the earlier it is performed the greater the chance of success. Whether a resection of the bruised portion of the stomach would have affected the result we can not, in the absence of exact details, determine; but this we may with confidence assert, that American surgery ranks as high as that of any country in the world, and that in the medical men chosen to attend the late President, America was worthily represented. Success in such a case would have been a triumph, but defeat is not disgrace.

Medical News.

CALIFORNIA.

Street Cuspidors.—Dr. T. J. McCoy, Los Angeles, favors the placing of cuspidors on street corners and in office buildings, with sewer connections and constantly flushed with running water. This, he believes, would do away with a very potent source of tuberculosis infection.

Los Angeles County Hospital.—An additional tax levy has been ordered which will provide $150,000 for a new county hospital for Los Angeles. The institution is to consist of fifteen two-story wards with accommodations for nurses and attendants, fire-proof and equipped with all modern conveniences.

COLORADO.

Dr. John W. O'Connor, chief surgeon of the Denver and Rio Grande Railway, has been appointed chief surgeon of the Rio Grande Western Railway, vice Dr. Frederick J. Bancroft, resigned.

New Teller County Hospital.—The plans for a new county hospital, to be located at Cripple Creek, have been approved by the State Board of Charities and Corrections, and the building will be speedily erected. It is to cost $15,000.

GEORGIA.

Personal.—Dr. Everett Daniel, Boston, has located in Moultrie.——Dr. W. C. Kellogg, who has been in service at the National Soldiers' Home, Washington, D. C., has opened an office in Augusta, with Dr. Theodore E. Oertel.——Dr. Craig Barrow has returned from his studies in Germany and will practice in Savannah.

Memorial to Dr. Holt.—The Macon Medical Association, at its meeting, September 20, passed the following resolutions: "That this Association recognizes an irreparable loss in the death of Dr. William Flewellen Holt. That his high tone, dignified courtesy and beautiful character commend him to the whole profession as one of its worthiest members, whose example is deserving of closest imitation."

Whisky Prescriptions.—Four Forsyth physicians who are also proprietors of drug stores and have furnished whisky on prescription to patients, have been indicted by the grand jury for failing to register as dealers and to pay the state tax of $200. The first called was found guilty and fined $400. When the cases against the others were called, they, believing that the indictments against them were illegal, refused to appear in court and their bonds were forfeited. The physicians say that when they pay their State professional tax they have a right to prescribe any medicine they may deem necessary.

ILLINOIS.

St. Mary's Hospital, Quincy.—The new addition to St. Mary's Hospital, Quincy, was formally dedicated, September 17.

Smallpox at Quincy.—A new case of smallpox was discovered at Quincy, September 23, and the patient taken to the City Hospital.

The Board Enjoined.—Dr. James A. Marshall, Pontiac, who claims that the Board of Managers of the State Reformatory are endeavoring to remove him for political reasons, has secured an injunction restraining the board from removing him.

Consumptives' Hospital.—The cornerstone of St. Anne's Hospital, Austin, a home for consumptives, which is being erected by the Sisters of St. Elizabeth Hospital, will be laid October 20. The building will cost $150,000 and will occupy grounds of ten acres.

Personal.—Dr. Henry T. Schildroth, Belleville, has been appointed medical examiner to the Civil Service Commission and has gone to Washington, D. C.——Dr. Thomas J. O'Malley has moved from Joliet to Chicago.——Dr. Edgar Thompson, U. S. Navy, has been visiting friends in Lebanon. He has been on duty in the Orient for two years.——Dr. Louis Ostrom has returned to Rock Island from Kansas.——Dr. William Wood, Cairo, is seriously ill at his home, Woodside.——Dr. Paul Healy has purchased the practice and property of Dr. William K. Farley, Waterman.

Chicago.

The College of Physicians and Surgeons held its opening exercises, October 1, Dr. Sanger Brown delivering the address.

Bequest to Presbyterian Hospital.—By the will of the late Henry C. Durand, Lake Forest, $10,000 is bequeathed to the Presbyterian Hospital.

Personal.—Dr. Alexander Hugh Ferguson has returned from Europe.——Dr. Ludvig Hektoen returned, last week, from his summer of study in Europe.

The Woman's Medical School of Northwestern University held its thirty-second annual opening exercises, October 1. The annual address was given by Dr. Martha Foote Crowe.

Rush Medical College graduated a class of 16, September 30. The address was delivered by Dr. Ferdinand C. Hotz. On October 1 the fall term opened with a large increase in the number of students.

Scarlet fever is said to have taken a strong hold in Austin; 17 cases have been reported. In Rogers Park the epidemic is thought to be under control and the school which had been closed was opened this week.

Chicago Medical Society.—The first meeting of this Society after the summer vacation was held in the new meeting-place, Schiller Hall, October 2, President Fenger in the chair. Dr. N. S. Davis, Sr., delivered an address on "The Origin and Progress of the Chicago Medical Society," and Dr. W. A. Evans presented a paper on "Fat Necrosis."

Illinois Medical College held its annual commencement exercises, September 26, graduating a class of fourteen. Dr. Henry Sewall, of Denver, delivered the doctorate address on "The Physician's Ideal." The new college buildings at Halsted Street and Washington Boulevard will be ready for occupancy January 1, 1902. In the evening a banquet was given at the Auditorium Hotel, at which Dr. Seth S. Bishop was toastmaster.

Northwestern University Medical School.—At the opening exercises of this school, October 1, a handsome portrait of Dr. N. S. Davis, Sr., was unveiled. The presentation speech was made by Dr. Winfield S. Hall, who spoke of the connection of Dr. Davis with the school for many years, and the portrait was accepted on behalf of the faculty by Dr. John E. Owens. Dr. N. S. Davis, Jr., who now occupies the position as dean of the school, formerly held by his father, presided and introduced James H. Eckels, who delivered the address of the evening. Rev. Robert D. Sheppard, D.D., spoke on behalf of the university and told of the advantages the occupancy of the Tremont House property would give to the medical students. Dr. Arthur R. Edwards, secretary of the medical faculty, spoke briefly. The enrolment in the medical school is 450, which is 100 more than in former years.

Diminishing Infant Mortality.—A satisfactory disclosure of steadily diminishing infant mortality was made during the week just ended, through a compilation of the records for the summer months of 1899, 1900 and 1901, made by the Department of Health, in response to a request from an eastern sanitarium for infants and children, and the figures are as follows for the months of June, July and August in the respective years: In 1899, total deaths under 1 year of age, 1819; in 1900, total 1551; in 1901, total 1545. These figures give annual death rates per 1000 of population of 4.43, 3.65 and 3.51, respectively; and of total mortality at all ages, 28.4 per cent., 26.2 per cent. and 24.5 per cent., respectively. Thus, in the last three years the mortality of infants has diminished 13 per cent. in proportion to total mortality at all ages and 20 per cent. in proportion to actual population, and there were 274 fewer infant deaths this year out of a population of 1,758,000 than in 1899 out of a population of 1,639,000.

IOWA.

Personal.—Dr. Paul Gardner, West Union, has located in New Hampton.——Dr. Addison J. Beebe has moved from Greeley to Hudson.

Hospital Fair.—The women of the Ottumwa Hospital Association are to conduct a county fair, October 10 and 11, for the benefit of the hospital.

Communicable Diseases.—Diphtheria is reported to be on the increase at Rowley, where schools and churches have been closed. Smallpox has reappeared in Des Moines, and three light cases of the disease are reported from Red Oak.

KANSAS.

Dr. Thomas Blakeslee, Neodesha, has been removed from his position as deputy internal revenue collector for Southeastern Kansas.

Hospital for Negroes.—The management of Douglas Hospital and Training School, Kansas City, has arranged for the purchase of a site for a hospital and training school in that city for the negro people of Kansas City, Kas., and Kansas City, Mo. An effort is being made to raise a fund for the work and $1000 is now on hand to make the first payment.

To Test Medical Law.—A requisition has been issued by the Governor for Horace L. Wilson, who is now supposed to be in Oklahoma. Wilson is a physician who formerly practiced in Ellis. It is charged that since September 1, when the law went into effect, he has violated its provisions by practicing without a certificate from the State Board of Medical Registration and Examination. It is also claimed that he is not a graduate of a regular medical college or a practicing physician of seven years' standing in the state. By this trial the constitutionality of the medical law will doubtless be brought into question.

Board Serves Free.—From August on the members of the State Board of Medical Registration and Examination serve without pay. The appropriation of $1200 passed by the last Legislature to pay salaries and expenses for the two years ending June 30, 1903, has been exhausted. After the first of September the board will hold meetings but once in three months and the members will pay their own expenses. The expenditures of the board were greater than expected on account of the great amount of work resulting from the issuance to physicians of certificates to practice in the state, as required by the new medical law.

MARYLAND.

Scarlet fever and diphtheria are prevailing in Montgomery County and several of the public schools have been closed in consequence.

Personal.—Dr. C. P. Gowman has moved from Odentown to Crumption.——Dr. Frank Dorsey, of Green Spring Valley, is in Boise City, Idaho.

Smallpox and Typhoid.—Maryland Health Officer Noble reports 16 cases of smallpox near Federalsburg, Caroline County, near the Deleware line and an epidemic of typhoid fever at Burrsville in the same county.

Baltimore.

The University of Maryland opened its year in the medical department without formal exercises.

Baltimore University School of Medicine opened September 30 with an introductory lecture by Dr. B. S. Hayden.

The Woman's Medical College opened its session October 1, with addresses on "The Medicine and Doctors of Juvenal," by Dr. Cordell, and on "The International Congress of Tuberculosis," by Dr. R. H. Thomas.

Maryland Medical College.—At the opening of Maryland Medical College Dr. William H. Pearce delivered the introductory address on "The Evolution of the Medical Profession." Baltimore Medical College began its year with an introductory address by Dr. S. K. Merrick, on September 26.

Care of the Insane.—The Board of Estimates approved the request of the Supervisors of City Charities for an additional $15,000 appropriation for the care of the insane in order to relieve the overcrowded condition of Bayview Hospital, making the total appropriation for the insane $119,400.

Infectious Disease Hospital.—A site has been selected for the infectious disease hospital on the Reisterstown Road, not far from Druid Hill Park. A tract of 10 acres has been bought for $20,000; $25,000 was appropriated some time ago for the purpose. The old quarantine grounds on the Patapsco opposite Fort McHenry, embracing 100 acres, will be sold. It is expected that $50,000 to $75,000 can be gotten for it which will help to put up a new building.

Personal.—Dr. Samuel C. Chew returned from Europe September 25.——Dr. James E. Willing has returned from a visit to the New England coast.——Dr. Marie E. Thalwitzer has returned from Europe.——Dr. John N. Mackenzie has returned from Narragansett Pier.——Dr. William Lee Howard has returned from his yachting excursion to the Azores.——Drs. Harvey Cushing and Mactier Warfield have returned from Europe.——Dr. W. G. MacCallum of Johns Hopkins Hospital has returned from his vacation.——Dr. Robert W. Johnson has returned from Europe.——Dr. F. M. Owens has been appointed resident physician at the City Hospital.——Dr. Melvin Rosenthal, who has recently returned from Europe, has been appointed associate professor of diseases of the skin at the College of Physicians and Surgeons.——Dr. Ira Remsen returned on September 23 to Baltimore after spending the summer in Maine and Massachusetts, but left again two days later to deliver the address at the dedication of the new laboratory of chemistry at Oberlin College, Ohio. While away Dr. Remsen finished another of his series of text-books on chemistry which is now ready for publication.

MICHIGAN.

Ann Arbor Medical Students, registered up to September 27, numbered 432, a decrease of 37 as compared with 1900. This falling-off is probably due to the changes in the requirements for admission.

Lying-in Hospitals.—The Detroit Board of Health has appointed Drs. Kennedy, Guy L. Kiefer and John L. Irwin a committee to investigate applications for licenses under the new law regulating lying-in hospitals.

No Spitting in Grand Rapids.—The Grand Rapids Board of Health has authorized signs to be made reading "No Spitting on the Sidewalks. By Order of the Board of Health," which are to be placed in prominent positions throughout the city.

Personal.—Dr. Murdock Kerr, health officer of Laurium, has resigned.——Dr. K. G. Brandes, Owosso, has moved to Quincy, Ill., where he has a hospital appointment.——Dr. James W. McMeekin, Saginaw, is recovering from a severe illness caused by septic infection.

August Mortality.—There were only 2672 deaths returned to the Secretary of State for the month of August, corresponding to an annual death rate of 13.1 per 1000. This is an unusually low mortality for August, the number of deaths returned being nearly 300 less than for August, 1900.

MINNESOTA.

St. Luke's Hospital.—The new St. Luke's Hospital, Duluth, is so well under way that it is now expected that it will be completed by Feb. 1, 1902.

Smallpox is spreading among the Indians in the state. It has appeared in virulent form on the Fond du Lac reservation, but has been apparently checked on the Mille Lacs reservation.

Diphtheria in virulent form has broken out at Friber, Otter Tail County, where six cases are reported. The disease is unusually prevalent in Minneapolis and the health commissioner is using his utmost efforts to enforce quarantine.

Personal.—Dr. Elbert E. Persons, U. S. Army, has been ordered to Fort Snelling to relieve Contract Surgeon Herbert J. Harris, who has been transferred to the Department of Cuba.——Dr. Louis B. Rennick, Glenwood, has moved to Lidgerwood, N. Dak.——Dr. James W. Robertson, Litchfield, has been appointed pension examining surgeon.

The Medical Department of the University of Minnesota held its opening exercises, September 23, in the old medical building, Minneapolis. Addresses were delivered by President Northrop, Dr. Parks Ritchie, Dr. Jacob E. Schadle and the Governor of the state. Dr. Schadle in his address reviewed the history of medicine from 500 B. C. to the present time.

NEW JERSEY.

Overbrook Asylum.—The new wing at Overbrook Asylum is now ready and 80 female patients have been transferred to their new quarters.

Did Not Report Disease.—An Orange and a Jersey City physician have been arraigned for failing to report cases of contagious disease, as required by law.

Personal.—Dr. Charles Waters has opened an office in Trenton.——Dr. Henry R. Baldwin, New Brunswick, was stricken with paralysis at Trenton, September 26.

Authority of Board of Medical Examiners.—A Newark applicant for a license to practice medicine, who was refused examination by the Examining Board on the ground that he had been convicted of malpractice, proposes to test the legality of the medical act. His attorney claimed that as his client had pursued a medical course in a reputable medical institution and had a certificate to that effect, had deposited the required fee and complied with all other legal preliminary requirements, the Board had exceeded its authority in refusing to allow him to take the Examination. He holds that the Board's province is to pass on the medical skill of applicants and not on their moral fitness. The Board, however, did not change its ruling.

NEW YORK.

Mystery Solved.—The mysterious disappearance of Dr. Charles W. Hoyt, Corning, has been cleared up by the finding of his body in Lake Erie, near Geneva, Ohio.

Personal.—Dr. Harold L. Baldwin, Syracuse, has entered into partnership with Dr. Henry C. Baum.——Upon the expiration of his term of office as Assemblyman, Dr. Nelson H. Henry, New York City, is to become Adjutant-General of this state.

School Children Examined.—The bureau of health of Syracuse has decided that the pupils of the public schools must be examined as to the condition of their health, twice a month. The principal object is to guard against contagious disease, but the physicians will also try to detect and remedy other physical defects. Defects in eyesight especially will be remedied as far as possible.

Sues State Hospital.—Dr. Marie L. Benoit, New York City, has brought suit against the board of managers of the New York State Custodial Asylum for Feeble-Minded Women.

Newark, and seeks to obtain reinstatement on the civil service list and salary, with value of maintenance as provided by law, for the months of July, August and September of this year. The plaintiff accuses the managers and the superintendent of breaking their contract with her, the terms of which, she claims, guaranteed her the position of resident physician at the institution until October 1. She claims her removal was ordered because she criticised the quality of the food supplied to the patients.

Albany Medical College opened for the session of 1901-1902 on September 24. Dr. Howard Van Rensselaer delivered the opening address. The following changes in faculty have been made: Dr. Willis G. Tucker, successor to the late Dr. Maurice Perkins, as professor of chemical philosophy and organic chemistry. Dr. Howard Van Rensselaer will be professor of materia medica, vice Dr. John V. Hennessy, resigned. The following appointments have been made as clinical professors: Dr. Leo Haendel Neuman, theory and practice of medicine and gastro-enteric diseases; Dr. Jesse Montgomery Mosher, insanity, neurology and electro-therapeutics; lecturers: Dr. William Olin Stillman, history of medicine; Dr. Harry Judson Lipes, obstetrics; Dr. Charles Harper Richardson, minor surgery; Dr. Arthur Wells Elting, surgical pathology; Dr. George Emory Lochner, gynecology, and Dr. Arthur Turner Laird, clinical microscopy.

Buffalo.

Professor Czerny, Heidelberg, Germany, has been a guest of Dr. Roswell Park.

Dr. C. A. Haman, Cleveland, read a paper on "Spasmodic Torticollis and Its Surgical Treatment" before the Surgical Section of the Buffalo Academy of Medicine, Tuesday, October 1, 1901.

The Experts Who Examined Czolgosz as to his sanity will be allowed fees by Erie County, at the rate of, approximately, $100 per examination. It will cost Erie County in the neighborhood of $2000 for their services.

The Medical Department of the University of Buffalo opened its fifty-sixth annual session, Sept. 30, 1901. Dr. F. C. Busch, professor of physiology, delivered the address of welcome, a review of the advances in medicine and surgery.

Emergency Hospital.—The throng of sightseers which daily has besieged the emergency hospital at the Pan-American Exposition since the wounded President was treated there, has become so great that the hospital staff found it almost impossible to perform the regular duties. A sign has been displayed that non-professional visitors are requested not to take up the time or attention of the hospital staff. Up to the time of the shooting the hospital was looked upon as a sort of exhibit and was open to the public at all hours of the day.

OHIO.

Dr. Lansing's Estate.—The estate of the late Dr. R. H. Lansing, Chillicothe, is valued at from $35,000 to $40,000.

Diphtheria is prevalent in Coshocton. Two Zanesville physicians have been arrested on the charge of failure to report cases of the disease.

Toledo Medical College held its twenty-first annual opening exercises, September 26. Addresses were made by Rev. Dr. Belsey, Dr. John S. Pyle and other members of the faculty.

The College of Physicians and Surgeons, Cleveland, for its forty-first term, opened September 18, without formal exercises. Dr. Charles B. Parker made a short address of welcome to the students.

Osteopath Arrested.—On complaint of Health Officer Beardsley, of Findlay, an osteopath of that place was arrested, September 24, charged with practicing medicine and with prescribing drugs for the cure of physical ailments, without complying with the state laws governing physicians.

Personal.—Dr. John F. Hesse had a second attack of paralysis at his office in Cincinnati, September 16, and is in a critical condition.——Dr. John E. Brown, Columbus, has returned from a three months' trip to Europe.——Dr. Edward Vail, Newark, the oldest practitioner in Licking County, was stricken with paralysis, September 21.

PENNSYLVANIA.

Measles is epidemic in South Williamsport.

A correspondence school of personal magnetism, magnetic healing and hypnotism is the latest Philadelphia novelty.

Woman's Medical College, Philadelphia, opened its fifty-second annual session, September 25. The address was delivered by Dr. Caroline M. Burnell.

A reception was tendered by the trustees and the faculty of the Medico-Chirurgical College, Philadelphia, to the members of the State Medical Society, guests and visiting ladies, at the college building, September 26, from 5 to 7 p. m.

Protest Against Isolation Hospital.—As vigorous protests were made to the mayor of Philadelphia against the establishment of an emergency hospital for contagious diseases in the twenty-eighth ward, he has directed that all work be stopped and to abandon the proposed location. He has ordered temporary pavilions to be constructed within the hospital enclosure.

Personal.—Dr. A. E. Stoits, Philadelphia, has located in Williamsburg.——Dr. J. A. Trexler, Macungie, has purchased the practice of Dr. Wagner, of Pikesville, and will locate in that place.——Dr. Edwin R. Rasely, Vanderbilt, has moved to Uniontown. He is to be resident physician for the Rainey Coke Company.——Dr. Judson Daland has returned to Philadelphia after his summer vacation, which was spent in European travel.——Drs. Thomas C. Buchanan, Honeybrook, and W. E. Fisher, have opened offices in Reading.

TEXAS.

Smallpox is reported to be epidemic in Ellis County.

Southern Pacific Hospital.—A hospital building is to be erected at El Paso by the Southern Pacific Railroad Company, which will accommodate fifty patients.

Fort Worth University Medical Department opened October 1, with appropriate exercises. The only notable change in the faculty is in the chair of anatomy, which is now held by Dr. Gardiner, who succeeds Dr. William R. Thompson, resigned.

Mosquito Warfare.—Galveston has arranged for a large supply of crude oil from the Beaumont wells, which will be sprinkled on all stagnant pools and gutters in the city and will be given to owners of open cisterns for use in destroying mosquitoes.

Personal.—Dr. John D. McMillan has sold his residence in Biardstown to Dr. Jefferson D. Skidmore, and will move to Paris.——Dr. E. C. Barham, Duffon, has moved to Hico.——Dr. T. J. Hubbert, Hico, has moved to Fort Worth.——Dr. E. D. Capps, Fort Worth, who has been in Europe the greater part of the summer, has returned to New York and will soon return to Texas.

WISCONSIN.

Milwaukee Medical College opened for its eighth annual session, September 17. Dr. John J. McGovern is the new professor of anatomy. More than 500 students have matriculated.

Smallpox has been reported at North Fond du Lac, imported from Colby, and is among the Winnebago Indians, at Brockway, where 100 cases are said to exist. It has also been reported at Sheboygan, said to have been brought from Sturgeon Bay, and at Newton.

To Enforce Smallpox Law.—Dr. G. O. Switzer, Stanley, has been appointed special medical inspector and agent of the State Board of Health for Chippewa and Taylor counties. Dr. Frank B. Hicks, city health officer of Washburn, has been named as the special representative of the State Board of Health to look after the work of suppressing smallpox in Bayfield county.

Personal.—Dr. L. W. Zochert, Hingham, has settled in Fond du Lac.——Dr. J. Johnson Heeren, Marinette, is located on a fruit ranch near Mimbres, N. M., and is regaining his health and strength.——Dr. Cora A. Turner-Saxe, Delavan, has sold her practice to Dr. Rebecca Rhodes, and will go to Everett, Wash., early in October.——Dr. Albert G. Jenner, Milwaukee, sailed September 19 for Europe on the *Spartan Prince*.——Dr. George H. McCallister, Elkhorn, has sold his practice to Dr. T. H. McCarthy, Stoughton.

GENERAL.

Surgeon General George M. Sternberg, U. S. A., arrived at San Francisco, October 1, from Manila.

Gift to Manila Hospital.—Mr. Whitelaw Reid, New York, has made a second gift of $5000 to the Woman's Hospital, Manila.

Plague at Rio Janeiro.—President Roca has signed a decree declaring that the port of Rio Janeiro is infected with the plague.

Examination for Physicians for Indian Service.—An examination will be held on October 22, for the position of physician in the Indian service, at White Earth Agency, Minnesota, at a salary of $900 a year.

American Hospital in Paris.—The project of erecting an American hospital in a suburb of Paris, which was about to be abandoned, has been revived by a donation from the Duchess of Marlborough of $10,000, and by the promise of a similar amount from her father, Mr. W. K. Vanderbilt.

Records of International Congress of Medicine.—The General Secretary of the 13th International Congress announces that the general volume and the seventeen records of the sections are ready for delivery. Any member who has not received the volumes and is entitled to them is requested to address the Editors of the Congress, Mrt. Masson et Cie., 120 Boulevard Saint Germain, Paris, not later than December 15, 1901.

Egypt's International Medical Congress.—An International Congress of Medicine will be held under the patronage of the Khedive of Egypt, at Cairo, in December, 1902. It will be the first great gathering of scientific men ever held in an oriental country. The subjects to be considered more particularly will be the diseases that come from the East, cholera and the bubonic plague, as well as forms of dysentery and ophthalmia prevalent in eastern lands. Among the medical men who are promoting the congress are Abbate Pasha, Tomanos Pasha, physician to the khedive; Ibrahim Pasha Hassan, dean of the Cairo Medical School; Mol Eloui Bey, the ophthalmologist, and the chief Egyptian physicians, native and foreign. Dr. Varonoff is secretary general of the committee in charge of arrangements.

An examination for colored doctors will be held October 29 and 30 by the United States Civil Service Commission, at Washington, D. C., for the position of assistant surgeon of the Freedman's Hospital. The examination is open to all citizens of the United States, and full information can be obtained by applying to the Commission Board. No one under 20 years of age is eligible. The subjects upon which the questions will be asked are: Letter writing, anatomy and physiology, surgery and surgical pathology, chemistry, materia medica, therapeutics, bacteriology and hygiene, theory and practice of medicine and general pathology, obstetrics and gynecology. The Freedman's Hospital is an institution established at Washington, D. C., for the free care and treatment of colored patients. It is understood that it is the custom of the department to appoint only colored people to positions. From the number of those who successfully pass the coming examinations, appointments will be made. The position carries a salary of $1000 to $1500 a year.

CANADA.

Asylum Staff Changes.—Dr. Harvey Clare, assistant physician at the Asylum for Idiots, Orillia, has been promoted to the position of assistant physician at the Asylum for the Insane, Brockville, to succeed Dr. Wilson, who has been transferred to the London Asylum.

Dowieite Convicted.—On the 26th inst. Mr. Justice Walker, of the British Columbia courts, found a member of the "christian catholic church in zion" guilty of manslaughter, on the charge of failing to provide proper medical attention for his two children who died from diphtheria.

Death of a Centenarian.—In the village of Troy, which is situated a short distance from the city of Hamilton, Ontario, there died the other day a man who had reached a ripe old age, Adam Misener, aged 103 years and seven months. There is no doubt about the authenticity of this man's great age. He was well known to the writer.

Annual Report: Provincial Board of Health, Ontario.—The nineteenth annual report of the Department of Public Health in Ontario has just been issued, and it deals with the year 1900. In a population set down at 2,302,705, there occurred 25,382 deaths, or 11.9 per 1000, the average population reporting being 93 per cent. The deaths occurring from consumption are set down at 2360.

Trinity Medical College Opening.—On the afternoon of the 25th inst. the opening lecture of the session of 1901-1902 was delivered by Professor Charles Sheard. Dr. Brennan, an old graduate, who was President Kruger's physician when the South African war broke out, but who immediately left him and joined the British forces, was present, and was welcomed by a number of old friends.

Quebec Medical Council.—At a meeting of the Board of Governors of the College of Physicians and Surgeons of Quebec, held on the afternoon of September 25, the following officers were elected: President, Dr. Lachapelle, Montreal; vice-presidents, Dr. Vallee, Quebec, and Dr. Craik, Montreal; registrar, Dr. Marsolais; treasurer, Dr. Jobin, Quebec; secretaries, Dr. McDonald, Montreal and Dr. Paquin, Quebec.

Something About the Birth Rate in Canada.—After all, it would appear that the largest families are not in the province of Quebec, but in Prince Edward Island, where five persons and four-fifths of a person constitute a family, according to the Toronto *Globe*. The Quebec family is said to consist of five and one-half; New Brunswick has the same record, while Nova Scotia has one-tenth of a person less. In Manitoba, British Columbia and the Territories the family is less than five.

The Outbreak of Anthrax in the Northwest.—Much alarm is experienced among cattlemen in Toronto and Montreal lest anthrax, which has been so widely prevalent in the Canadian Northwest, be introduced into Ontario, generally, one or two districts now being already infected. Over 4000 sheep belonging to one company in the Northwest are dead and considerable loss among cattle and horses is also reported. The disease was brought into that part of the Dominion by Australian sheep-shearers. It is understood that owing to the general quarantine immediately set on foot the outbreak is being held in check.

Smallpox.—Smallpox has reappeared in the Island of Manitoulin, but in a very mild form. The Provincial Health Department has ordered that all cases and suspects be quarantined and that vaccination be generally enforced. The outbreak at Ottawa begins to assume a serious aspect. It is understood that Dr. Robillard, who has been health officer of the city for over twenty years, has resigned on account of being hampered and criticised in his work. An employe of the census bureau has contracted the disease and Dr. Montizambert, the Director-General, has had to vaccinate the entire staff of that department. Toronto has been declared free of the disease by the medical health officer.

FOREIGN.

Hospital at Port Arthur.—The Russian government is erecting a sanitarium at Port Arthur at an expense of 200,000 roubles.

Dresden school children show, as the results of the medical inspection of all school children, that 50 per cent. deviate from the normal standard.

Women Excluded.—The professors of anatomy, chemistry and physics at the University of Königsberg have excluded women students from their lectures.

The German Balneologic Association has published an appeal for subscriptions to erect a memorial in honor of H. Brehmer, the father of the tuberculosis sanatorium.

International Exposition of Photography.—Dr. A. E. Stein, Berlin, assistant at Bergmann's clinic, obtained the prize for medico-scientific photography at the recent exposition in Weimar.

Prize Founded in Honor of Tokarski.—The patients and admirers of the recently deceased Moscow professor, A. Tokarski, are collecting subscriptions to establish a quadrennial prize to bear his name, to be awarded for the best work on the application of hypnotism to the treatment of nervous diseases.

Country Homes for the Convalescents of the Paris Hospitals.—The Paris authorities are seriously considering the proposition of sending convalescents dismissed from the hospitals to board in families in the country. The expense is less than to establish sanitariums, while the physical and moral advantages are considered superior.

Jockey Hospitals.—It is not generally known that Newmarket, England, and Chantilly, France, have each a hospital for jockeys only, where those injured in the races or suffering from any except contagious diseases are admitted and cared for in a princely manner. The *Gaz. Méd. de Paris* states that the Chantilly hospital has two permanent inmates, pensioned and retired on account of age.

Free Post-Graduate Medical Courses in Berlin.—The central committee organized to "promote the perfecting of the art of medicine in Prussia," by holding post-graduate courses, reports that 1140 physicians have made application in Berlin this year, against 797 in 1900. There are now nineteen courses, and a series of conferences on military surgery and medicine, and also on industrial accidents from the medicolegal point of view.

Hirschberg's Library.—The famous ophthalmologist of Berlin, J. Hirschberg, has compiled a catalogue of the works in his library on his specialty, with a brief descriptive outline of the contents. It forms a volume of 434 pages, and as the collection is destined for the library of the Berlin Medical Society, ophthalmologists are rejoicing. The *Deutsche Med. Wochenschrift* remarks that the Hirschberg ophthalmologic collection is the most extensive and complete in the world.

Virchow's Birthday Festivities.—The official celebration commences on the day before the birthday, October 12, with the inspection of the newly-installed collections of the Pathological Museum, to which Virchow himself issues the invitation. At six p. m. a banquet is tendered to Virchow and his family, the delegates from abroad and his most intimate friends. It will be held in the Prussian Abgeordnetenhaus or House of Deputies, and afterwards the party will adjourn to the assembly hall, where the delegates and others will present their greetings and contributions to the famous Virchow Fund, with a souvenir pamphlet containing the names of the contributors. The city of Berlin has voted to contribute 100,000 marks—about $25,000—to the fund. The medical societies of Moscow are to hold a joint session on that day in honor of Virchow, and, besides sending a deputation to Berlin, have commenced collecting funds to establish a Virchow scholarship at the university. The Paris Society of Anthropology sends a gold medal in his honor.

French War on Consumption.—Since the congress in London, all the individual leagues founded to combat tuberculosis have consolidated into a single gigantic "union for struggle against consumption." Delegates representing all the mutual aid and mutual insurance societies met in the hall of the Sorbonne and agreed to contribute a fund of $10,000 yearly for the support of 100 beds in the hospitals of each large city in France, besides supporting 300 free consulting-rooms in public sanatoriums throughout the country for the coming year. Moreover, the members of the new union purpose publishing a periodical devoted solely to fighting the disease, which annually destroys so many lives in France. This periodical will be edited principally by Dr. Calmitte, head of the Pasteur Institute at Lille. The organizers of the present movement, which is the largest yet established, hope that a similar move will be made in the United States and Great Britain. A beginning in this line has already been made in Germany.

LONDON LETTER.

Tuberculosis in Animals.

The Local Government Board has issued to the Borough Councils a letter dealing with the tuberculosis question in which it is pointed out that the views of Professor Koch have not received the assent of scientific men and that pending the Report of the Royal Commission there should be no relaxation in the measures dealing with milk from tuberculous cows and with tuberculous meat. As the action of the local authorities is not uniform the Board calls attention to the report of the Royal Commission on Tuberculosis held in 1898 as to the degree of tuberculous disease which should cause a carcass, or a part thereof, to be seized. This commission was of opinion that the entire carcass and all the organs of cattle might be seized, 1, when there is miliary tuberculosis of both lungs; 2, when tubercular lesions are present on the pleura and peritoneum; 3, when tubercular lesions are present in the muscular system or in the lymphatic glands embedded in or between the muscles; and that the carcass if otherwise healthy should not be condemned, but every part containing lesions destroyed when the lesions are confined to the lungs and thoracic lymphatic glands, when the lesions are confined to the liver, when the lesions are confined to the pharyngeal lymphatic glands, and when the lesions are confined to any combination of the foregoing, but are collectively small in extent. In pigs, in view of the greater tendency of tuberculosis to generalization, the Commission considered that tubercular deposits in any degree should involve seizure of the whole carcass and of the organs. In respect of foreign dead meat, seizure was recommended in every case in which the pleura had been "stripped." The Local Government Board now strongly urge the Borough Councils to enforce these regulations.

Major Ross' Anti-Malarial Campaign.

A letter has been received by the Chairman of the Liverpool School of Tropical Medicine from Major Ronald Ross, giving information of the results of his visit to the Gold Coast and of the work of the fifth expedition of the school. He first refers to the admirable measures of Sir William Macgregor at Lagos, which have been already described in The Journal. At Accra, arrangements have been made to improve the condition of the Europeans by buying up several poor locations planted in their midst. An admirable plan has been formed for laying out the town of Sekondi in accordance with scientific requirements by buying out the poor locations on the foreshore, extending the European quarters along the bluff to the east, and placing the native town apart—behind the railway. Major Ross informed the governor that he did not think that the housing question would in itself put a stop to the fever and that the measures adopted at Freetown and Lagos should be extended as soon as possible, and that considering the importance of the matter the Liverpool School of Tropical Medicine would consider the advisability of sending a delegate to direct operations. At Sierra Leone he found a gang of men employed in clearing the larvæ of mosquitoes out of the houses. In 34 days they had cleared 2473 houses and removed 358 cartloads of empty tins, broken bottles and such like in Freetown. It is calculated that one in three empty tins is a breeding-place for mosquitoes. A serious blow has, therefore, been struck at the prevalence of the culex mosquito in the town. Major Ross calculates that an annual expenditure of only £100 would keep the town free from mosquitoes. Already their numbers are greatly reduced. These culex mosquitoes, besides causing annoyance, carry the germs of yellow fever, elephantiasis, and other diseases. Operations against the anopheles mosquito, which breeds in puddles, are also being pushed. Hollows in the ground are everywhere being drained or filled with earth. Others are being filled with the empty bottles and tins found in the houses. Many of the worst streets, which were practically marshes, have been reclaimed. The unhealthfulness of the Gold Coast, Major Ross believes, has been much exaggerated. True, there is a considerable amount of malaria among Europeans, but there is little or no typhoid. Everywhere men are met who have lived on the coast for years in good health. It is the young, reckless, improvident and sometimes intemperate newcomer who generally falls a victim to disease. If a man contracts malarial fever now in 9 cases out of 10 it is his own fault. The scrupulous use of a mosquito net is necessary.

Lunacy in 1900.

The report of the Commissioners in Lunacy for 1900 has just been issued. The total number of lunatics of whom they had notice in 1900 was 107,944—an increase of 1333 for the year as against increases of 1525 in 1899 and 3114 in 1898. As the average annual increase for the last five years has been 2300, the increase for 1900 must be considered small.

The Gelatin Treatment of Aortic Aneurism: Fatal Tetanus Produced.

At Guy's Hospital a very unfortunate result has followed in the case of two patients undergoing this treatment. Three patients—a carter, aged 37, an engineer's laborer, aged 33, and a third one—underwent the gelatin treatment about the same time. The latter was discharged, according to the opinion expressed at the inquest, thoroughly cured. But the two former have died from tetanus. What the weak links in the chain of antiseptic precautions were is not known. It is difficult to believe that the spores could have been in the original gelatin and resisted the prolonged sterilizing processes to which it was subjected.

The Outbreak of Smallpox in London.

The outbreak of smallpox, which has been previously described in The Journal, appears to be on the decline. In eight weeks, ending Sept. 7, 135 cases were admitted to the hospital, and of these, 113 were admitted during the last three weeks of that period. For the week ending August 24 there were 30 cases; August 31, 52 cases, and September 7, 31. The cases have not come from one quarter of London, but from all over the metropolis. A source of anxiety is the large number of unvaccinated children in London, the result of the recent vaccination act which practically abolishes compulsion. It is estimated that a third of the children who attend elementary schools are unvaccinated. The difficulty of diagnosis which the ordinary physician experiences has been previously mentioned in The Journal. Vaccination acts in two ways in producing this difficulty—by rendering cases so rare that most doctors have never seen the disease and by modifying the eruption. Suspected cases are first removed to shelters where they remain under observation until the diagnosis is definite; in case the patients are suffering from smallpox they are then removed to hospital ships in the Thames, which are specially reserved for the disease.

Correspondence.

Aim of Medical Education, and Its Relation to Research Work by Medical Students.

CHICAGO, Sept. 23, 1901.

To the Editor:—The editorial in your issue of Sept. 21st, commenting upon my paper on "The Aim of Medical Education, and Its Relation to Research Work by Medical Students," which appeared in the same issue, shows such a lack of understanding of the points of the paper that I beg the privilege of reply.

The writer of the editorial has distinctly misunderstood my use of the expression: "Original research has for its object the determining of new truths of a more or less general character." I do not blame him for this, as the language is imperfect, and I felt it at the time of writing. The language would have been better had I omitted the limiting phrase, "of a more or less general character." What I had in mind, however, which gave rise to the phrase was this: Every truth in one of the basic sciences which bears upon "clinicism," has in the latter numerous applications; it is, therefore, to the latter "more or less general." The point, however, is not important, and to discuss it further would lead to a mere tangle of words, something I wish to avoid. To further clear the way for true discussion, I grant at once that all knowledge is relative and that speculations as to the "absolute" have no place here. Furthermore, I can not see how anything I said could have led to his very true, but wholly irrelevant statement: "Only occasionally does that master mind appear which is capable of new generalizations, justifiably far-reaching." He asks: "Again, is it fair to consider that work unworthy of the name of research which, though it fail to say the last word upon the problem upon which it is engaged, gathers all the data at the time available, reflects upon them and draws legitimate inferences from them, even when the result is only an approximation to the whole truth?" He thinks not; so do I. But the whole question is irrelevant. The question has probably arisen from the following in my paper: "As Huxley says: 'There is one guiding rule by which a man may always find this path [to truth] and keep himself from straying when he has found it. This golden rule is—give unqualified assent to no proposition but those the truth of which is so clear and distinct that they can not be doubted.' Any so-called research less critical is unworthy of the name." If by "legitimate inferences" he means inferences which meet the requirements of Huxley's rule, then we are in accord. My objection is not to the research or its incompleteness, but to tentative conclusions. The problem actually solved is the one formulated by just conclusions. The question which the editor asks appears, however, unfair in that it implies a criticism (erroneous as has been shown) of a portion of an argument away from its context, and entirely overlooks the point of the argument. I am sure that upon sober second thought the editor will lose the fears which he expresses as to the ultimate outcome of the "medical mode of thought." The matter is too extensive for proper exposition in a letter, but in a paper to be presented later, I shall show that it requires no less accuracy of observation nor less of logical reflection than characterizes all scientific methodology, but on the contrary rather more than most scientific procedures, and that its great characteristic is that it is on the whole much more difficult than most work in the basic sciences, because of the inherent peculiarities of the subject matter, with which it deals.

Upon the question of the relation of medical students to research work, he agrees that the majority of medical students are unfitted, especially during their undergraduate years, for original research; and gives reasons for it with which I fully concur. The reason which I give for this same position he does not agree with and in stating it does not state it exactly as given. He further says: "But has he any evidence which would indicate that such an assumption is true? Surely, every-day experience points to the opposite view, and certainly the statements made in his paper can scarcely be regarded as convincing." The alleged assumption relates to the differences which exist in the process of diagnosis and in that of research. I feel quite sure that the assumption will be granted by medical men who are in the habit of making thoughtful and careful diagnoses daily. He also presumably includes in the assumption my statement that research in the basic sciences is capable of being harmful to the young medical man. He offers no evidence to support his own view; the evidence by which I support mine will be presented in my subsequent paper.

Very respectfully, W. S. CHRISTOPHER, M.D.

The Function of the Appendix.

NEW YORK, Sept. 20, 1901.

To the Editor:—On page 852 of THE JOURNAL for Sept. 28, 1901, I find a report of a paper read by Dr. E. P. Hershey, Denver, dealing with the question of the function of the appendix. Dr. Hershey apparently believes that the secretions of the appendix are important in their influence on bowel contents, but we know that such secretions are trifling in amount and not different from those of the cecum. Most of the appendices upon which I have operated have had their function already destroyed by bacteria. Further than that, we know that during middle life the appendix is prone to undergo normal involution changes, so that in later life there is little if any secreting surface left. Dr. Hershey says of the cecum: "This cul-de-sac is the most inviting place for the accumulations of feces. The mass remains here and would become hardened were it not for the secretions that keep the mass thin and moist." I would like to have a record of actual observations made upon this point. Those of us who see the cecum a good many times in the course of a month, note the fact that it is about the emptiest part of the bowel, and might well have been named the jejunum. I have seen several hardened cecums, and have operated many times in cases in which some one had made the diagnosis of cecal impaction, that never yet, so far as I remember, has the cecum contained any palpable fecal matter. The "fecal impaction" was regularly peritoneal exudate, and usually abscess. I make these points because there are many physicians who are anxious to be right, but who are too busy to become properly informed on the subject of the appendix. They gladly seize upon such data as those furnished by Dr. Hershey in order to escape, if possible, from the dictum of authorities who advise operation in appendicitis as soon as the diagnosis is made. Consequently, it seems no more than fair in the interests of science and humanity if we ask Dr. Hershey to give us the result of carefully recorded, accurate observation. In the East we have learned to look at Denver as a city containing representatives of all that is best in modern medical knowledge, and it is unfortunate to have a false note sounded from a section of the country that has gained so well-merited a reputation.

ROBERT T. MORRIS.

Why Withhold Tobacco?

TOLEDO, Sept. 25, 1901.

To the Editor:—This question, whether he should be permitted to smoke or not, came up in the treatment of our late President, and possibly has in it a lesson which should be considered on account of the applicability which it may have to the treatment of surgical cases generally. Does the sudden stopping of the habitual use of tobacco make the bodily functions more resistant to the processes of disease, and more efficient in the healing of wounds? Does the nervous system suffer and lose its balance by withholding its accustomed sedative? Are the secretory system, the excretory system, in fact all of the systems of the body, by the sudden taking from them of the load to which they have learned to adapt themselves, made stronger, or are they left stagnated because the stimulus which has been prompting them to their abnormal action has been removed?

To smoke three or four cigars in one day would probably kill a man who was not accustomed to its use, but the system of the habitual user of tobacco has become so gradually saturated that it, like the system of the arsenicophagy is able to stand the strain. In the case of the arsenic eater instant withdrawal of the poison is sudden death.

Just why the desire for the narcotic stops during sickness, and immediately upon the receipt of injury, is unexplainable. May it not be the fact that the abnormal sedation which the tobacco has been producing gives way to unbalance, irregularity in functions, and destructive action, upon the withdrawal of the narcotics? Is it just possible that in sickness and injuries where desire for tobacco has been lost, that some preparation of tobacco should be regularly administered hypodermically?

J. L. Tracy.

Regarding Christian Science.

Chicago, Sept. 12, 1901.

To the Editor:—In The Journal of July 27 was published what was supposed to be "a sample of Christian Science," "a prayer for a dyspeptic, drawn up by Mr. Hazzard, president of the New York School of Primitive and Practical Christian Science." Please permit me to state through your columns that the gentleman mentioned is not a Christian Scientist, his school is not a Christian Science school, the prayer attributed to him is not a Christian Science prayer, and the publication to which it is credited is not a Christian Science publication. Any deductions, therefore, which might be drawn as to the teachings of Christian Science from the "prayer for a dyspeptic" must be erroneous.

Archibald McLellan.

Book Notices.

La Peste Bubonique dans la Republique Argentine et au Paraguay Epidémies de 1899-1900. Rapport Présenté au Départment National D'Hygiène par les Docteurs Luis Agote et A. J. Medina, Inspecteurs délégués du Gouvernement Argentin. Paper. Pp. 298. Buenos Aires: Felix Lajouane. 1901.

This report of the National Department of Hygiene of Argentina is an evidence of the thorough appreciation of sanitary questions in that South American Republic. The authors give the history of the introduction and course of the disease in succession into Asuncion, Rosario and Buenos Aires, discuss the local conditions in each place that favored its development, devote chapters to treatment and prophylaxis and conclude with an appendix giving reports of cases. They endorse serum therapy as giving better results in the cases in which it has been employed than other methods of treatment, and the accidents or inconveniences following its use slight. They do not, however, unreservedly hold with Haffkine that serum immunization renders needless other prophylactic measures. Where the serum treatment was impossible in these cities the treatment was largely symptomatic—balneotherapy, cardiac tonics, anti-spasmodics, intestinal disinfectants, etc. Incision of the buboes was practiced, and bleeding was found occasionally of value. The work is a valuable contribution to the not yet too ample scientific literature of this recently recrudescing pest of former times.

Transactions of the Vermont State Medical Society, 1900. Published by the Society. Cloth. Pp. 195. Free Press Association, Burlington. 1901.

The Secretary calls attention to the fact that while 15 or 20 new members are added each year, the total enrolment remains practically the same on account of those who are dropped for non-payment of dues. The membership is given as 219, although how many are back in their dues three years is not stated. There are about 600 regular physicians in the State, hence only about one-third are active members of their State Society. The report of the committee on reorganization is an excellent one and contains recommendations, which, if adopted, can not but be a benefit to the profession of Vermont. In the report of the delegates to examine the graduates of the medical department of Dartmouth College, we are informed that the temperature of that day was 143 degrees below zero—rather cool certainly. The volume contains twelve papers, besides the reports, obituaries, etc.

The Office Treatment of Rectal Diseases Explained and Simplified. Being an Exposition of the Treatment of all Those Diseases, Both Medical and Surgical, of the Rectum, Anus and Sigmoid Flexure, the Cure of which May Be Accomplished Without Surgical Anesthesia. Illustrated. By Rufus D. Mason, M.D., Omaha, Neb., Professor of Rectal and Pelvic Surgery in the John A. Creighton Medical College. Cloth. Pp. 83. Price, $1.50. Omaha: E. B. Festner. 1901.

The author does not attempt to cover the field of rectal diseases, but only those conditions that are liable to be met by the general practitioner. As such the book is to be commended.

A Hand-Book of Genito-Urinary Surgery and Venereal Diseases. By G. M. Phillips, M.D., Professor of Genito-Urinary Surgery and Venereal Diseases, Barnes Medical College. Illustrated by Half-tone Cuts and Special Drawings by L. Crusius, M.D. Cloth. Pp. 313. Price, $2.00. St. Louis, Mo.; Lewis S. Matthews & Co. 1900.

The subjects are treated clearly and concisely. The half tones and drawings are unusually good and instructive. For the student and practitioner it will be found a convenient reference book.

Miscellany.

San Francisco Plague Report, Fortieth Verified Death.

Lee Mon Chong, male, aged 40 years, a cigarmaker by occupation, died on Aug. 30, 1901.

Autopsy.—Body of a Chinese male, fairly well nourished; rigor mortis not present; body still warm, pupils moderately dilated, scleræ not injected. Glandular enlargement well marked in left inguinal region, slight enlargement in right axilla; no local lesion to account for enlargement. Two small ecchymotic spots over bubo in the groin, lividity not marked, slight on dependent parts. Upon incising the bubo, a bloody hemorrhagic fluid exuded; the glands were seen to be enlarged, injected, and surrounding tissues edematous. Smears from the gland, stained with carbol-thionin, showed numerous bipolar staining bacilli.

Abdominal Incision.—Subcutaneous fat was moderately abundant; subcutaneous vessels injected; left abdominal muscles infiltrated. Intestines were slightly distended, moist and glistening, showing a number of dark areas, probably submucous hemorrhages. Little or no fluid was in the abdominal cavity; appendix normal.

Diaphragm, attachment, right, 5th rib. Left, 4th interspace. Lungs met in median line but collapsed anteriorly. Left slightly adherent at apex.

Pericardium.—Area was about normal in extent, contains about 10 c.c. of clear yellowish fluid.

Heart.—Surface was covered with fat; vessels slightly injected; heart muscle soft and flabby. Ventricles full of fluid blood; valves normal. Numerous plaques on surface of aorta; coronary openings free. Heart muscle was pale and in some places evidence of fatty change.

Lungs.—Left lung pits on pressure and crepitates throughout. Pressure causes serum and air to exude from cut surface. No nodules. Lung appears normal except for edema. In the right lung, middle and upper lobes pit and crepitate throughout except at the site of an old tubercular scar at apex. The upper and anterior part of the lower lobe is somewhat firmer than normal, but crepitates, especially about the border. The pleura still glistens, color purplish, interspaced with dark dition. The treatment advised is a psychic one, mental or suggestive therapeutics being necessary. A number of cases were described.

President's Address.

Dr. Thomas D. Davis delivered the address on the evening of the first day of the meeting, followed by a reception tendered to the Society by the Philadelphia County Medical Society. The title of the address was "Pioneer Physicians of Western Pennsylvania." Dr. Davis gave an interesting account of the perils and privations experienced by the physicians who crossed the Alleghenies in the latter part of the eighteenth century and ministered there to the sick and wounded. Many suffered death at the hands of the Indians. "The pioneer doctor," said Dr. Davis, "was often also a farmer, a minister or a school teacher. He traveled over several counties, and often made long and perilous journeys alone. But he did his duty, danger or no danger, as his successors do now."

(To be continued.)

AMERICAN PUBLIC HEALTH ASSOCIATION.

Twenty-ninth Annual Meeting, held in Buffalo, Sept. 17-20, 1901.

President Dr. Benjamin Lee, Philadelphia, in the Chair.

There were many representatives present from the United States, Porto Rico, Canada and Mexico.

Opening Address.

Dr. Stephen Smith, New York, *one of the ex-presidents* of the Association, made the "Opening Address." He referred to the havoc which death had wrought in the ranks of the Association during the past decade, and in giving a history of the public health system of the United States said in part: "Thirty years ago there were not more than three or four well-organized municipal boards of health in this country, but to-day there is scarcely a civil organization without its department of health. Within a single decade this Association has been largely instrumental in the development of a complete system of public health administration in this country, namely, municipal, state and national. A national board of health, which was at one time established by Congress, existed but four years, and for *twenty years we have been without* such a body chiefly because of a want of *harmony among those* who approach Congress on the subject."

Dr. Smith then referred to the early history of the Marine-Hospital Service, saying that it was originally created at the close of the eighteenth century in imitation of the English system, when the sailor's home was on the sea, but since the steamship has supplanted the sailing vessel, the sailor's home is at the port. All great advances, he said, in health legislation result from the devastation of epidemic pestilences.

Dr. A. L. Guyon, in moving a vote of thanks to Dr. Smith for his paper, drew attention to the fact that while on his right sat the Director General of Public Health of Canada, and while on his left sat the supreme head of the sanitary department of Mexico, the United States had no such officer, and that a demand should be made on the government to make such an appointment.

Out of respect to the memory of President McKinley, and in accordance with the national and state proclamations relating thereto, it was decided to hold no meeting on Thursday, Sept. 19.

Dr. Montizambert, of Ottawa, Canada, and Dr. [illegible] ingly referred to the sad [illegible] of [illegible] city, and extended the

army in 1889, it was not thoroughly established until 1892. The second period began with that year and ended with 1897. He did not quote *figures after 1897, because he did not believe the figures of the last three years of active service in the army could fairly be compared with the figures for a period in the time of peace, although he commented that, as a matter of fact, the figures for 1898, 1899 and 1900, show even a more marked improvement in those conditions of the army that* were affected by the canteen than the figures for the six years immediately preceding 1892 showed over the precanteen period from 1885 to 1891. The paper showed that for the ten years *from 1878 to 1887 the ratio of soldiers entered upon the sick reports for alcoholism* was as 64.28 to 1000; that this rate was diminished as the canteen was gradually introduced, and that comparing the period of 1885-91 to the period of 1892-97, the statistics showed a reduction of 23.6 per cent. in the entries *for alcoholism on the sick list, in favor of the latter* period. That, whereas, in 1890, before the canteen was fairly established, the number of posts at which the alcoholism entries on the sick list exceeded 10 per cent. of the total strength *of the garrison, in the following year the number of such posts* was 11, *and each succeeding year the number* was reduced until, in 1897, there were only two posts throughout the army which showed *a* greater rate of alcoholic sick cases than 10 per cent. of their total strength. The author showed that the *gravity of the cases of alcoholism* also was reduced through the influence of the canteen, and that the number of cases of insanity diminished during the period in which the canteen was thoroughly established.

The profits of the canteen each year were returned to the men for the purpose of buying better *food, reading matter*, gymnasium and athletic equipment, and in other ways to make their lives more comfortable and the military service more attractive. The writer showed that during the period of 1892-1897 there was *an increase* of 13.3 per cent. in the number of soldiers *making* deposits with the army paymaster over the number for the precanteen period, 1886-91. Also that the average number of convictions by court marshals for drunkenness during the precanteen period was 372 a year, whereas the average number after the canteen was established was but 160.

Much might be said to show the remarkable influence which the canteen, with its restricted sale of beer and light wines, has had in preserving the health of troops, maintaining discipline and promoting temperance; but in view of the figures given further argument on the subject would seem unnecessary. The canteen, as formerly operated, was a positive element for good, and so regarded by 95 per cent. of the more than 600 officers of the army who have made reports concerning its influence to the Secretary of War.

At the conclusion of Dr. Munson's paper, the following resolution was offered by Dr. Charles A. Lindsley, of New Haven, Conn., which was adopted:

Resolved, That this body deplores any action in curtailing the operation of the army canteens or post exchanges, and in the interest of general and military sanitation and temperance recommends their establishment as formerly existing in the United States.

Dr. Charles R. Greenleaf, *army surgeon*, described the sanitary conditions in the Philippine Islands since the United States came into occupancy of them.

Tuberculosis.

Dr. Felix Formento, New Orleans, stated that the discovery of the tubercle bacillus was one of the greatest events of *modern* medicine, unifying into one classification many affec- [illegible] ed as being of a different character; also making [illegible] certain; it was shown that the disease [illegible] an to man; that the sputum of con- [illegible] of infection; but was it not [illegible] is was only transmissible [illegible] no part in this trans- [illegible] shown that [illegible] a powerful [illegible] to

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prevalent in grip than in measles. He believed there was no specific excitant in the attacks of grip or influenza.

Incudectomy in Progressive Hardness of Hearing, Tinnitus Aurium and Ear Vertigo.

Dr. Charles H. Burnett, Philadelphia, stated that in this disease the surgeon encountered a trophoneurosis of the muscular structures of the middle ear, and not simply a chronic catarrhal process. The chronic catarrnal process often accompanies symptoms of progressive hardness of hearing and tympanic vertigo. The aural symptoms, however, often remain unchanged when the catarrhal symptoms have been relieved. The aural symptoms were outlined. Progressive hardness of hearing is apt to pass from one ear to the other. The treatment advised by Dr. Burnett is the removal of the incus from the worse ear, leaving the remaining conductors in place. The difficulty of the operation necessitates the etherization of the patient. Dr. Burnett's cases show the efficiency of the operation in checking the progress of deafness and in the total and permanent arrest of ear vertigo.

Reasons for Early Operation in Acute Mastoiditis.

Dr. William H. Dudley, Easton, stated that there is a variety of acute mastoiditis, usually a sequel to chronic purulent otitis media, which at no time presents any serious local symptoms. In some of these cases the swelling may be moderate in amount, the tinnitus not great and at no time is there great pain or other general disturbance; yet, when given sufficient time, so extensive may the disease become as to seriously threaten the patient's life. Cases illustrative of this condition were cited. Aside from the intractable chronic otitis media purulenta which may follow these cases, if the condition is allowed to continue, there may ensue extradural abscess, meningitis, cerebral abscess or septic thrombosis of the lateral sinus with their attendant fatalities. He believed that the dangers attending mastoiditis not operated upon in the early stages have not been sufficiently impressed upon the mind of the profession.

Dr. B. Alexander Randall, Philadelphia, believed that many of the mastoid inflammations were not purulent and do not need operative intervention; at least four out of five cases of redness, swelling and tenderness of the mastoid, in his experience, did not require operation, but would clear up under proper medication and rest.

Dr. Burnett stated his belief that operation was indicated in the presence of one or more of the three symptoms: pain, pyrexia or prolapse in the posterior upper portion of the auditory canal. He referred to the paper of Dr. Shepherd, of Brooklyn, on "Acute Mastoiditis following Acute Otitis Media," which he considered one of the best he had ever read.

Ocular Affections of Childhood Associated with Impaired General Nutrition.

Dr. S. D. Risley, Philadelphia, gave briefly the clinical history of two cases to illustrate the form of ocular disease frequently occurring during adolescence, but not necessarily dependent upon the peculiar conditions of vitality at that age. He gave a graphic picture of the general conditions. In conclusion he called attention to the important influence the trials of school life when associated with headache and painful hot eyes due to eye strain from abnormal refraction may have over the general health of the child.

Gumma of the Ciliary Body.

Dr. Edward Stieren, Pittsburg, in this paper remarked that syphilitic invasion of the deeper parts of the eye, especially the acquired form, usually calls for a guarded prognosis. A detailed report of an apparently hopeless case was given. When the patient was first seen in 1899 the diagnosis of tertiary syphilis was made. When last seen, on July 19, 1901, the only evidence of the gumma was a slaty discoloration of the sclera and the misplaced pupil.

Contagious Diseases of the Eye and Their Treatment.

Dr. S. Lewis Ziegler, Philadelphia, said that the successful treatment of contagious disease of the eye presupposed an early recognition of the symptoms and the prompt application of active measures for relief. The contagious diseases were classified under catarrhal ophthalmia, and purulent ophthalmia. He spoke briefly of acute catarrhal and granular conjunctivitis. In these prophylaxis should play an important part. If one eye alone is affected a separate handkerchief should be used for each eye. The local treatment for both conditions was described. The purulent inflammations were detailed with their symptoms. The discharges of the purulent inflammations are usually septic in character and extremely virulent in action. Instructions which should be given the attendant are outlined. The most successful local prophylactic measures in the treatment of ophthalmia neonatorum he said were limited to three: 1, Credé's ointment; 2, the irrigation of the eyes with a solution of mercuric bichlorid, 1 to 4000; 3, a solution of protargol in strength of from 10 to 25 per cent.

Address in Mental Disorders.

Dr. Robert H. Chase, Superintendent of the Friends' Asylum for the Insane at Frankford, Philadelphia, took for his subject, "Paresis from the Standpoint of the General Practitioner." Its importance was brought to the attention of the general physician and his responsibility pointed out. The initial stage should be intelligently studied for speedy recognition of the disease, and because it is often the only time when treatment is successful. The history of the disease was given, and the following prominent theories respecting its nature briefly stated: 1, as a complication of insanity; 2, as a distinct form of insanity; 3, if not as a group of cerebral or cerebrospinal affections, at least as a paralytic dementia, to which is associated more or less frequently, and under various conditions, insanity.

Progressive Muscular Dystrophy in Brother and Sister.

Dr. A. A. Eshner, Philadelphia, reported these cases in a brother and sister, aged respectively 13 and 32. The cases were interesting particularly because of their occurrence in two members of the same family, of the history of another dystrophy in the collateral ancestry, and of the presence of a traumatic cerebral disorder in the father. The most plausible explanation of the lesions, the author said, was that attributing them to some developmental defect, resulting in the replacement of muscular by fatty and fibrous tissue, with secondary motor disability and the consequent deformities. The disorder is usually progressive, with unfavorable prognosis. Massage and electricity were mentioned as possible aids in the preservation of undestroyed muscular tissue and in the prevention of deformities. Surgical treatment may be indicated, and mechanical measures may be employed to aid locomotion.

Prognosis in Neuritis.

Dr. F. Savary Pearce, Philadelphia, said that in summing up scientific clinical facts of carefully studied cases of neuritis there would be found to exist signs and symptoms indicating the ultimate results in different classes of cases depending upon the pathogenic findings, the variety of cases, etc. The etiology of the case is so closely interwoven with symptomatology and with true foresight or prognosis, indeed, that not anything like definite results can be prognosticated until the cause is determined. Examples of needle prick and gunshot wounds, as affecting nerve tissue badly, were stated. The prognosis in such traumatic cases is usually very grave. Cases were referred to exemplifying this. It was pointed out that pressure neuritis should be differentiated from the palsies of occupation neuritis in which latter there is usually a central cortical asthenia; the local disability will depend upon the cure of the primary. In the ordinary pressure neuritis the prognosis is good. Predisposition by alcoholism should be borne in mind in these cases. Degeneration of peripheral nerve trunks after severance was spoken of; also diathetic causes of neuritis. Reference was made to the gastro-intestinal tract as of importance in the correction of disorder in this part of the body.

Some Cases of Hysteria.

Dr. Edward E. Mayer, Pittsburg, emphasized the statement that hysteria is always a psychic disease; and, that the various symptoms are but the result of this primary mental con-bluish green. The lower posterior portion of the lobe was completely consolidated; pleura, of a light pinkish color, had lost its luster and contained subpleural hemorrhages. Cut surface of the consolidated portion is rich in blood, light pinkish color. Pressure caused blood, but no air or serum to exude. The appearance does not bear any resemblance to any stage of croupous pneumonia. No tubercles present.

Spleen.—Enlarged to about one and a half times normal size; capsule wrinkled, moderately firm in consistence; color not very red; no white nodules subcapsular, cuts a little firmer than normal. Connective tissue increased; cut surface moderately rich in blood; pulp slightly bulging.

Liver.—Gall-bladder moderately distended, contained no stones. Liver about normal or slightly smaller in size, surface smooth and glistening, of a light chocolate color. Normal in consistence, cut surface moderately rich in blood.

Kidneys.—Left: smaller than normal, soft, fatty capsule well preserved; capsule stripped readily, exposing a light yellowish surface, mottled with red, which was not granular, in which the venæ stellatæ showed prominently. Cut surface rich in blood. Contrast between cortex and pyramids well preserved. Cortical margin normal in breadth; same color or a little deeper than described on surface. Left kidney same as right.

Stomach.—Mucous membrane showed a few submucous hemorrhages. Smears from the spleen and blood did not show any organisms.

Animals inoculated from the glands of the bubo died of typical plague infection.

NEW CASES.

Ng Chon was seen at 821 Washington Street, September 11, by Dr. Kellogg, the city bacteriologist. According to the representations of inmates of the house, he had been sick one week. The Doctor found him with a temperature of 104, pulse 120, with a dry mouth and coated tongue. There was a large bubo in the right femoral region. No evidence of venery. No microscopical examination of fluid from the bubo nor blood allowed. He was removed to the plague hospital and is recovering.

Alexander Winters, a sailor, came from a ship in the harbor. He was taken sick on September 11, on board ship, with vomiting and chills; a bubo developed at the same time in the right femoral region. He came ashore and entered a lodging-house at 812 Third Street, where he remained for two days. He then applied at the Marine-Hospital where he was admitted and where he now is. There was no evidence of venereal disease in his case. Blood taken from the bubo gave a pure culture of the bacillus pestis. The results of animal inoculation are not completed.

Association News.

Nicholas Senn Prize Medal.

The committee on the Senn Medal beg leave to call attention to the following conditions governing the competition for this medal for 1902:

1. A gold medal of suitable design is to be conferred upon the member of the American Medical Association who shall present the best essay upon some surgical subject.

2. This medal will be known as the Nicholas Senn Prize Medal.

3. The award will be made under the following conditions: *a*. The name of the author of each competing essay shall be enclosed in a sealed envelope bearing a suitable motto or device, the essay itself bearing the same motto or device. The title of the successful essay and the motto or device is to be read at the meeting at which the award is made, and the corresponding envelope to be then and there opened and the name of the successful author announced. *b*. All successful essays become the property of the Association. *c*. The medal shall be conferred and honorable mention made of the two other essays considered worthy of this distinction, at a general meeting of the Association. *d*. The competition is to be confined to those who at the time of entering the competition, as well as at the time of conferring the medal, shall be members of the American Medical Association. *e*. The competition for the medal will be closed three months before the next annual meeting of the American Medical Association, and no essays will be received after March 1, 1902.

Communications may be addressed to any member of the committee, consisting of the following: Dr. Herbert L. Burrell, 22 Newbury Street, Boston, Mass.; Dr. Edward Martin, 415 S. 15th Street, Philadelphia, Pa.; Dr. Charles H. Mayo, Rochester, Minn.

Married.

Thomas J. O'Malley, M.D., to Miss Helen M. Ahern, both of Joliet, Ill., July 10.

T. A. Hudson, M.D., Olive, Tex., to Miss Mattie De Arman, Hico, Tex., September 10.

James Patrick Moore, M.D., to Miss Elizabeth Taylor, both of Yazoo City, Miss., October 2.

Joseph E. Gardner, M.D., Fort Worth, Tex., to Miss Rose Montague, at Bandera, Tex., September 11.

A. E. Myers, M.D., Jamestown, N. Y., to Miss Jessie E. Beacon, Randolph, N. Y., September 18, at the home of the bride.

Henry Blankenhorn, M.D., Orrville, Ohio, to Miss Mabel Buckley, Marshallville, Ohio, September 26, at the home of the bride.

Deaths and Obituaries.

Charles H. Guibor, M.D., Rush Medical College, Chicago, 1871, died at his home in Topeka, Kan., September 22, from intestinal obstruction following an operation for carcinoma, aged 59. He was born in St. Louis, Mo., and first practiced in Iowa Falls, Iowa, moving to Kansas in 1875, where he took up his practice at Beloit, remaining there until 1889, when he removed to Topeka. He was a member of the Kansas Board of Medical Examiners for a number of years.

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Missouri State and County Board of Health.—The State Board of Health organized with about twenty County Boards at a meeting held in Sedalia, September 10, by the election of the following officers: President, Dr. A. W. McAllister, Columbia; vice-president, Dr. W. F. Morrow, Kansas City, and corresponding secretary, Dr. J. R. Graham, St. Joseph. The object of the organization is to encourage a harmonious working of the State and County Boards, especially in the matter of controlling contagious diseases.

The Fifth International Congress of Zoology.—The principal features of this Congress which convened at Berlin, August 19, were Grassi's detailed report of the Italian Society for the study of malaria and what it has accomplished, and Schenk's communication on the results of his method of sex determination. He claims that time is confirming the correctness of his views, and that his array of cases in which sex was determined by his method of preliminary treatment, is so long and so extensive that the idea of mere coincidence must be definitely abandoned. The profession abroad not only refuse to accept his premises, but state that even if they were true their promulgation would be a social calamity.

Medical Society of the Missouri Valley.—The fourteenth annual meeting of this Society was held in St. Joseph, Mo., September 19, with President Treynor in the chair. After passing resolutions on the death of the President, the Society adjourned to permit its members to attend the McKinley memorial services. On the evening of September 19 an adjournment to Eureka Springs, Ark., was taken, where the annual outing was enjoyed and the regular program carried over from St. Joseph was continued. Following is the list of officers elected for the coming year: President, Dr. Richard C. Moore, Omaha; vice-presidents, Drs. A. D. Wilkinson, Lincoln, and M. F. Weymann, St. Joseph; treasurer, Dr. Donald Macrae, Council Bluffs, and secretary, Dr. Charles Wood Fassett, St. Joseph. The next meeting will be held in Lincoln, Neb., March, 1902.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Fifty-first Annual Meeting, held in Philadelphia, September 24-26, 1901.

First Day.—Morning Session.

President, Dr. Thomas D. Davis, Pittsburg, in the Chair.

Dr. George Erety Shoemaker, on behalf of the Philadelphia County Medical Society as its President, extended a welcome to the Society. He compared the position of the various societies to that of brothers annually welcoming to their homes in turn the other members of a family. In this city there is much to link us to the past in the history of medicine. Here was the life work of many of the leaders who have molded medical thought for generations. From their traditional or direct influence a strong stimulus is yet felt. The hope was expressed that in the development of library systems some means would be found to distribute medical books widely from the central institutions, so that practitioners at a distance might be in touch with the treasures of medical literature. The President extended the thanks of the Society for the warm welcome and remarked that in coming to Philadelphia the Society felt that it was coming to a medical atmosphere.

Mayor Ashbridge extended a welcome on behalf of the city, which, he said, enjoyed not only a national but an international reputation for its skill in medicine and surgery. So far as the administration of public affairs was concerned, he said bluish green. The lower posterior portion of the lobe was completely consolidated; pleura, of a light pinkish color, had lost its luster and contained subpleural hemorrhages. Cut surface of the consolidated portion is rich in blood, light pinkish color. Pressure caused blood, but no air or serum to exude. The appearance does not bear any resemblance to any stage of croupous pneumonia. No tubercles present.

Spleen.—Enlarged to about one and a half times normal size; capsule wrinkled, moderately firm in consistence; color not very red; no white nodules subcapsular, cuts a little firmer than normal. Connective tissue increased; cut surface moderately rich in blood; pulp slightly bulging.

Liver.—Gall-bladder moderately distended, contained no stones. Liver about normal or slightly smaller in size, surface smooth and glistening, of a light chocolate color. Normal in consistence, cut surface moderately rich in blood.

Kidneys.—Left: smaller than normal, soft, fatty capsule well preserved; capsule stripped readily, exposing a light yellowish surface, mottled with red, which was not granular, in which the venæ stellatæ showed prominently. Cut surface rich in blood. Contrast between cortex and pyramids well preserved. Cortical margin normal in breadth; same color or a little deeper than described on surface. Left kidney same as right.

Stomach.—Mucous membrane showed a few submucous hemorrhages. Smears from the spleen and blood did not show any organisms.

Animals inoculated from the glands of the bubo died of typical plague infection.

NEW CASES.

Ng Chon was seen at 821 Washington Street, September 11, by Dr. Kellogg, the city bacteriologist. According to the representations of inmates of the house, he had been sick one week. The Doctor found him with a temperature of 104, pulse 120, with a dry mouth and coated tongue. There was a large bubo in the right femoral region. No evidence of venery. No microscopical examination of fluid from the bubo nor blood allowed. He was removed to the plague hospital and is recovering.

Alexander Winters, a sailor, came from a ship in the harbor. He was taken sick on September 11, on board ship, with vomiting and chills; a bubo developed at the same time in the right femoral region. He came ashore and entered a lodging-house at 812 Third Street, where he remained for two days. He then applied at the Marine-Hospital where he was admitted and where he now is. There was no evidence of venereal disease in his case. Blood taken from the bubo gave a pure culture of the bacillus pestis. The results of animal inoculation are not completed.

Association News.

Nicholas Senn Prize Medal.

The committee on the Senn Medal beg leave to call attention to the following conditions governing the competition for this medal for 1902:

1. A gold medal of suitable design is to be conferred upon the member of the AMERICAN MEDICAL ASSOCIATION who shall present the best essay upon some surgical subject.

2. This medal will be known as the Nicholas Senn Prize Medal.

3. The award will be made under the following conditions: *a.* The name of the author of each competing essay shall be enclosed in a sealed envelope bearing a suitable motto or device, the essay itself bearing the same motto or device. The title of the successful essay and the motto or device is to be read at the meeting at which the award is made, and the corresponding envelope to be then and there opened and the name of the successful author announced. *b.* All successful essays become the property of the ASSOCIATION. *c.* The medal shall be conferred and honorable mention made of the two other essays considered worthy of this distinction, at a general meeting of the ASSOCIATION. *d.* The competition is to be confined to those who at the time of entering the competition, as well as at the time of conferring the medal, shall be members of the AMERICAN MEDICAL ASSOCIATION. *e.* The competition for the medal will be closed three months before the next annual meeting of the AMERICAN MEDICAL ASSOCIATION, and no essays will be received after March 1, 1902.

Communications may be addressed to any member of the committee, consisting of the following: Dr. Herbert L. Burrell, 22 Newbury Street, Boston, Mass.; Dr. Edward Martin, 415 S. 15th Street, Philadelphia, Pa.; Dr. Charles H. Mayo, Rochester, Minn.

Married.

THOMAS J. O'MALLEY, M.D., to Miss Helen M. Ahern, both of Joliet, Ill., July 10.

T. A. HUDSON, M.D., Olive, Tex., to Miss Mattie De Arman, Hico, Tex., September 10.

JAMES PATRICK MOORE, M.D., to Miss Elizabeth Taylor, both of Yazoo City, Miss., October 2.

JOSEPH E. GARDNER, M.D., Fort Worth, Tex., to Miss Rose Montague, at Bandera, Tex., September 11.

A. E. MYERS, M.D., Jamestown, N. Y., to Miss Jessie E. Beacon, Randolph, N. Y., September 18, at the home of the bride.

HENRY BLANKENHORN, M.D., Orrville, Ohio, to Miss Mabel Buckley, Marshallville, Ohio, September 26, at the home of the bride.

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Mayor Ashbridge extended a welcome on behalf of the city, which, he said, enjoyed not only a national but an international reputation for its skill in medicine and surgery. So far as the administration of public affairs was concerned, he said there had been an endeavor to do the best to enlarge the opportunity of the medical student; the hospital for contagious diseases had been opened to the graduates of the colleges. The staff of the Philadelphia Hospital had been enlarged, and to medical gentlemen had been given the selection of those appointed.

Dr. John H. Musser, Chairman of the Committee on Arrangements and Credentials, presented the program, and announced that arrangements had been made for the holding of clinics.

Dr. John V. Shoemaker, Philadelphia, offered a resolution that the Society testify to the profound grief of its members at the loss of the Chief Executive of the United States, and that such resolutions be placed in the records of the Society.

Representation in the House of Delegates, A. M. A.

The Secretary, Dr. C. L. Stevens, reported a total membership of 3460. This was a net increase of 110. This membership entitled the Society to seven delegates in the House of Delegates in the American Medical Association, lacking only 41 members of the number entitling the Society to a representation of eight delegates; this number he hoped would be realized by June, 1902.

Dr. E. E. Montgomery, Philadelphia, moved that the Nominating Committee be directed to select and nominate seven delegates from the Society to the House of Delegates of the American Medical Association, four for two years and three for one; also sixteen alternates; it to be understood that the first alternate take the office of the eighth delegate if by June, 1902, the Society should be entitled, as there was reason to hope, to the eighth delegate. The resolution was seconded and adopted.

The report of the Board of Trustees showed that the financial affairs of the Society had been prosperous and that no unusual expense had been incurred.

It was with sincere regret that the Board reported the death of Dr. John Curwen, long a most respected and useful member of the Society; once the President, and at the time of his death a member of the Board of Trustees.

The Committee on Publication reported that 4000 copies of The Journal of the State Medical Society had been published each month, of which about 2500 were distributed monthly to the members of the auxiliary county societies. The advertising pages had been made to conform strictly to the requirements of the Code of Ethics.

Reports of Committees.

The Committee on Pharmacy called attention to the prevalent abuse of hospital and dispensary clinics by patients able to pay for professional services, and recommended that the legislature be asked to pass an act requiring all persons seeking such aid to record their names and addresses, and when unable to write, make their marks, as is customary in legal documents, in a book kept for the purpose, which shall be open to inspection by proper persons, and if possible inflict a penalty upon those who fraudulently receive aid. The use of tablets in set formula was also deprecated.

The Committee on the Rush Monument Fund regretted to report that nothing had been done by the Committee since the meeting at Lancaster.

The Committee on Increase of Membership and Polyclinic Teaching reported an increase of 110 members in the Society. Thirty-one societies have a larger membership than last year and 14 had lost in membership during the year. The Committee suggested that personal visitation is needed in societies lacking vitality. This had proven of value in some individual societies.

The Committee on Archives announced the death of Dr. J. Augustus Ehler of Lancaster, Pa. Dr. Ehler had taken an active interest in the Society from its inception, having been one of the founders. He was particularly energetic in the committee work and most anxious that all matters pertaining to the history of the organization be placed in a convenient locality for consultation by members. The Committee further reported that the cataloguing of volumes deposited in the Library of the University of Pennsylvania had been continued.

The Committee on Examination of School Text-Books reported progress. Two members of the Committee, Dr. Israel Cleaver of Reading, and Dr. John Fay of Allegheny, asked to be discharged. The names of Dr. G. A. Parker of Southampton, and Dr. W. A. N. Dorland of Philadelphia, were suggested to take their places.

Dr. Henry Beates, Jr., Chairman of the State Board of Medical Examiners, gave the number of graduates from the respective medical colleges who had applied for examination during the year with the percentage of success and failure. He called the attention of the Society to the fact that while great advances had been made during the period in which the law governing medical practice has been operative, yet the conditions of medical education to-day are deplorable. He expressed the hope that the Society, standing as it does as the exponent of the highest type of medical education, would assert itself in no uncertain manner in demanding the ideal.

Dr. John B. Roberts, Philadelphia, Delegate to the Conference on National Legislation of the American Medical Association, reported that the annual conference was held on February 20, 1901, in Washington, and read a brief report of the results of the meeting.

The President contributed a Minute concerning the late Dr. Samuel S. Towler. Dr. Towler was widely known and very successful in his practice. As a matter of conscience he answered all calls, no matter how wearisome or unremunerative. He was the soul of generosity, always having a cordial greeting for all. As a citizen and a business man he had the confidence of all who knew him, and was prominent in Christian work.

Directory of Physicians for the State.

Dr. John B. Roberts offered a resolution that the Committee on Publication, in conjunction with the Board of Trustees, consider the propriety of publishing a Directory of the physicians of Pennsylvania similar to the Directory published by the New York Medical Association; and, that if the said Committee and the Board of Trustees deem it wise to publish such a Directory, that authority is hereby given for such publication. The resolution was approved and referred to the proper committee.

FIRST DAY.—AFTERNOON SESSION.

Address in Otology.

Dr. E. U. Buckman, Wilkesbarre, noted some changes that have taken place in the progress of otology in the last six years. In the beginning of Dr. Buckman's practice of otology mastoiditis was looked upon with considerable dread, but the present methods of radical operation are so successful, and in skilful hands attended with so little danger that now abortive treatment is not continued for any length of time. The treatment of this disease is now one of the most satisfactory procedures in the whole realm of otology. Tinnitus aurium was referred to as one of the least satisfactory conditions to treat and one in which there probably has been the least progress in the last five to twenty years. The use of electrolysis in cases of obstinate tinnitus and increasing deafness he had found beneficial. Success in the treatment of these conditions depends more upon how medicines or instruments are used than upon what is used.

Some Aural Complications of Influenza.

Dr. S. MacCuen Smith, Philadelphia, stated that influenza has been recognized and treated as such for ages, the epidemics having always been characterized by intervening periods during which the disease seems to have been banished. Brief mention was made of mastoid complications, counseling their early recognition and the adoption of energetic measures for relief of local symptoms and the prevention of additional complication of even more serious import.

Dr. Charles H. Burnett, Philadelphia, in discussion, said that when the so-called epidemics of grip or influenza broke out in 1889 he had been practicing otology seventeen years and he had never seen any case of so-called grip presenting symptoms which he had not seen previous to the spread of this affection. The hemorrhagic form he did not think any more prevalent in grip than in measles. He believed there was no specific excitant in the attacks of grip or influenza.

Incudectomy in Progressive Hardness of Hearing, Tinnitus Aurium and Ear Vertigo.

Dr. Charles H. Burnett, Philadelphia, stated that in this disease the surgeon encountered a trophoneurosis of the muscular structures of the middle ear, and not simply a chronic catarrhal process. The chronic catarrnal process often accompanies symptoms of progressive hardness of hearing and tympanic vertigo. The aural symptoms, however, often remain unchanged when the catarrhal symptoms have been relieved. The aural symptoms were outlined. Progressive hardness of hearing is apt to pass from one ear to the other. The treatment advised by Dr. Burnett is the removal of the incus from the worse ear, leaving the remaining conductors in place. The difficulty of the operation necessitates the etherization of the patient. Dr. Burnett's cases show the efficiency of the operation in checking the progress of deafness and in the total and permanent arrest of ear vertigo.

Reasons for Early Operation in Acute Mastoiditis.

Dr. William H. Dudley, Easton, stated that there is a variety of acute mastoiditis, usually a sequel to chronic purulent otitis media, which at no time presents any serious local symptoms. In some of these cases the swelling may be moderate in amount, the tinnitus not great and at no time is there great pain or other general disturbance; yet, when given sufficient time, so extensive may the disease become as to seriously threaten the patient's life. Cases illustrative of this condition were cited. Aside from the intractable chronic otitis media purulenta which may follow these cases, if the condition is allowed to continue, there may ensue extradural abscess, meningitis, cerebral abscess or septic thrombosis of the lateral sinus with their attendant fatalities. He believed that the dangers attending mastoiditis not operated upon in the early stages have not been sufficiently impressed upon the mind of the profession.

Dr. B. Alexander Randall, Philadelphia, believed that many of the mastoid inflammations were not purulent and do not need operative intervention; at least four out of five cases of redness, swelling and tenderness of the mastoid, in his experience, did not require operation, but would clear up under proper medication and rest.

Dr. Burnett stated his belief that operation was indicated in the presence of one or more of the three symptoms: pain, pyrexia or prolapse in the posterior upper portion of the auditory canal. He referred to the paper of Dr. Shepherd, of Brooklyn, on "Acute Mastoiditis following Acute Otitis Media," which he considered one of the best he had ever read.

Ocular Affections of Childhood Associated with Impaired General Nutrition.

Dr. S. D. Risley, Philadelphia, gave briefly the clinical history of two cases to illustrate the form of ocular disease frequently occurring during adolescence, but not necessarily dependent upon the peculiar conditions of vitality at that age. He gave a graphic picture of the general conditions. In conclusion he called attention to the important influence the trials of school life when associated with headache and painful hot eyes due to eye strain from abnormal refraction may have over the general health of the child.

Gumma of the Ciliary Body.

Dr. Edward Stieren, Pittsburg, in this paper remarked that syphilitic invasion of the deeper parts of the eye, especially the acquired form, usually calls for a guarded prognosis. A detailed report of an apparently hopeless case was given. When the patient was first seen in 1899 the diagnosis of tertiary syphilis was made. When last seen, on July 19, 1901, the only evidence of the gumma was a slaty discoloration of the sclera and the misplaced pupil.

Contagious Diseases of the Eye and Their Treatment.

Dr. S. Lewis Ziegler, Philadelphia, said that the successful treatment of contagious disease of the eye presupposed an early recognition of the symptoms and the prompt application of active measures for relief. The contagious diseases were classified under catarrhal ophthalmia, and purulent ophthalmia. He spoke briefly of acute catarrhal and granular conjunctivitis. In these prophylaxis should play an important part. If one eye alone is affected a separate handkerchief should be used for each eye. The local treatment for both conditions was described. The purulent inflammations were detailed with their symptoms. The discharges of the purulent inflammations are usually septic in character and extremely virulent in action. Instructions which should be given the attendant are outlined. The most successful local prophylactic measures in the treatment of ophthalmia neonatorum he said were limited to three: 1, Credé's ointment; 2, the irrigation of the eyes with a solution of mercuric bichlorid, 1 to 4000; 3, a solution of protargol in strength of from 10 to 25 per cent.

Address in Mental Disorders.

Dr. Robert H. Chase, Superintendent of the Friends' Asylum for the Insane at Frankford, Philadelphia, took for his subject, "Paresis from the Standpoint of the General Practitioner." Its importance was brought to the attention of the general physician and his responsibility pointed out. The initial stage should be intelligently studied for speedy recognition of the disease, and because it is often the only time when treatment is successful. The history of the disease was given, and the following prominent theories respecting its nature briefly stated: 1, as a complication of insanity; 2, as a distinct form of insanity; 3, if not as a group of cerebral or cerebrospinal affections, at least as a paralytic dementia, to which is associated more or less frequently, and under various conditions, insanity.

Progressive Muscular Dystrophy in Brother and Sister.

Dr. A. A. Eshner, Philadelphia, reported these cases in a brother and sister, aged respectively 13 and 32. The cases were interesting particularly because of their occurrence in two members of the same family, of the history of another dystrophy in the collateral ancestry, and of the presence of a traumatic cerebral disorder in the father. The most plausible explanation of the lesions, the author said, was that attributing them to some developmental defect, resulting in the replacement of muscular by fatty and fibrous tissue, with secondary motor disability and the consequent deformities. The disorder is usually progressive, with unfavorable prognosis. Massage and electricity were mentioned as possible aids in the preservation of undestroyed muscular tissue and in the prevention of deformities. Surgical treatment may be indicated, and mechanical measures may be employed to aid locomotion.

Prognosis in Neuritis.

Dr. F. Savary Pearce, Philadelphia, said that in summing up scientific clinical facts of carefully studied cases of neuritis there would be found to exist signs and symptoms indicating the ultimate results in different classes of cases depending upon the pathogenic findings, the variety of cases, etc. The etiology of the case is so closely interwoven with symptomatology and with true foresight or prognosis, indeed, that not anything like definite results can be prognosticated until the cause is determined. Examples of needle prick and gunshot wounds, as affecting nerve tissue badly, were stated. The prognosis in such traumatic cases is usually very grave. Cases were referred to exemplifying this. It was pointed out that pressure neuritis should be differentiated from the palsies of occupation neuritis in which latter there is usually a central cortical asthenia; the local disability will depend upon the cure of the primary. In the ordinary pressure neuritis the prognosis is good. Predisposition by alcoholism should be borne in mind in these cases. Degeneration of peripheral nerve trunks after severance was spoken of; also diathetic causes of neuritis. Reference was made to the gastro-intestinal tract as of importance in the correction of disorder in this part of the body.

Some Cases of Hysteria.

Dr. Edward E. Mayer, Pittsburg, emphasized the statement that hysteria is always a psychic disease; and, that the various symptoms are but the result of this primary mental condition. The treatment advised is a psychic one, mental or suggestive therapeutics being necessary. A number of cases were described.

President's Address.

Dr. Thomas D. Davis delivered the address on the evening of the first day of the meeting, followed by a reception tendered to the Society by the Philadelphia County Medical Society. The title of the address was "Pioneer Physicians of Western Pennsylvania." Dr. Davis gave an interesting account of the perils and privations experienced by the physicians who crossed the Alleghenies in the latter part of the eighteenth century and ministered there to the sick and wounded. Many suffered death at the hands of the Indians. "The pioneer doctor," said Dr. Davis, "was often also a farmer, a minister or a school teacher. He traveled over several counties, and often made long and perilous journeys alone. But he did his duty, danger or no danger, as his successors do now."

(To be continued.)

AMERICAN PUBLIC HEALTH ASSOCIATION.

Twenty-ninth Annual Meeting, held in Buffalo, Sept. 17-20, 1901.

President Dr. Benjamin Lee, Philadelphia, in the Chair.

There were many representatives present from the United States, Porto Rico, Canada and Mexico.

Opening Address.

Dr. Stephen Smith, New York, one of the ex-presidents of the Association, made the "Opening Address." He referred to the havoc which death had wrought in the ranks of the Association during the past decade, and in giving a history of the public health system of the United States said in part: "Thirty years ago there were not more than three or four well-organized municipal boards of health in this country, but to-day there is scarcely a civil organization without its department of health. Within a single decade this Association has been largely instrumental in the development of a complete system of public health administration in this country, namely, municipal, state and national. A national board of health, which was at one time established by Congress, existed but four years, and for twenty years we have been without such a body chiefly because of a want of harmony among those who approach Congress on the subject."

Dr. Smith then referred to the early history of the Marine-Hospital Service, saying that it was originally created at the close of the eighteenth century in imitation of the English system, when the sailor's home was on the sea, but since the steamship has supplanted the sailing vessel, the sailor's home is at the port. All great advances, he said, in health legislation result from the devastation of epidemic pestilences.

Dr. A. L. Guyon, in moving a vote of thanks to Dr. Smith for his paper, drew attention to the fact that while on his right sat the Director General of Public Health of Canada, and while on his left sat the supreme head of the sanitary department of Mexico, the United States had no such officer, and said that a demand should be made on the government to make such an appointment.

Out of respect to the memory of President McKinley, and in accordance with the national and state proclamations relating thereto, it was decided to hold no meeting on Thursday, September 19.

Dr. Frederick Montizambert, of Ottawa, Canada, and Dr. Eduardo Liceaga, of Mexico, feelingly referred to the sad event which had just culminated in this city, and extended the sympathy of themselves and their countrymen.

Some Results of the Army Canteen or Post Exchange From the Standpoint of Discipline and Hygiene.

Captain Edward L. Munson, assistant surgeon in the United States Army, read statistics he had compiled from the official records of the War Department, comparing the figures of two periods. The first period, which he called the precanteen period, consisted of the seven years from 1885 to 1891, inclusive. Though the canteen was first introduced in the army in 1889, it was not thoroughly established until 1892. The second period began with that year and ended with 1897. He did not quote figures after 1897, because he did not believe the figures of the last three years of active service in the army could fairly be compared with the figures for a period in the time of peace, although he commented that, as a matter of fact, the figures for 1898, 1899 and 1900, show even a more marked improvement in those conditions of the army that were affected by the canteen than the figures for the six years immediately preceding 1892 showed over the precanteen period from 1885 to 1891. The paper showed that for the ten years from 1878 to 1887 the ratio of soldiers entered upon the sick reports for alcoholism was as 64.28 to 1000; that this rate was diminished as the canteen was gradually introduced, and that comparing the period of 1885-91 to the period of 1892-97, the statistics showed a reduction of 23.6 per cent. in the entries for alcoholism on the sick list, in favor of the latter period. That, whereas, in 1890, before the canteen was fairly established, the number of posts at which the alcoholism entries on the sick list exceeded 10 per cent. of the total strength of the garrison, in the following year the number of such posts was 11, and each succeeding year the number was reduced until, in 1897, there were only two posts throughout the army which showed a greater rate of alcoholic sick cases than 10 per cent. of their total strength. The author showed that the gravity of the cases of alcoholism also was reduced through the influence of the canteen, and that the number of cases of insanity diminished during the period in which the canteen was thoroughly established.

The profits of the canteen each year were returned to the men for the purpose of buying better food, reading matter, gymnasium and athletic equipment, and in other ways to make their lives more comfortable and the military service more attractive. The writer showed that during the period of 1892-1897 there was an increase of 13.3 per cent. in the number of soldiers making deposits with the army paymaster over the number for the precanteen period, 1886-91. Also that the average number of convictions by court marshals for drunkenness during the precanteen period was 372 a year, whereas the average number after the canteen was established was but 160.

Much might be said to show the remarkable influence which the canteen, with its restricted sale of beer and light wines, has had in preserving the health of troops, maintaining discipline and promoting temperance; but in view of the figures given further argument on the subject would seem unnecessary. The canteen, as formerly operated, was a positive element for good, and so regarded by 95 per cent. of the more than 600 officers of the army who have made reports concerning its influence to the Secretary of War.

At the conclusion of Dr. Munson's paper, the following resolution was offered by Dr. Charles A. Lindsley, of New Haven, Conn., which was adopted:

Resolved, That this body deplores any action in curtailing the operation of the army canteens or post exchanges, and in the interest of general and military sanitation and temperance recommends their establishment as formerly existing in the United States.

Dr. Charles R. Greenleaf, army surgeon, described the sanitary conditions in the Philippine Islands since the United States came into occupancy of them.

Tuberculosis.

Dr. Felix Formento, New Orleans, stated that the discovery of the tubercle bacillus was one of the greatest events of modern medicine, unifying into one classification many affections considered as being of a different character; also making diagnosis perfectly certain; it was shown that the disease was communicable from man to man; that the sputum of consumptives was the great carrier of infection; but was it not going too far to affirm that tuberculosis was only transmissible by contagion, and that heredity played no part in this transmission? The observation of sanitarians had shown that heredity, as in cancer and other affections, was a powerful agent of transmission. Some cases of direct transmission to the fetus in utero had been observed. Without hereditary predisposition local infection would remain sterile in the great majority of cases. The air swarmed with microbes, and those who were predisposed succumbed. In order that a seed might develop two conditions were required, an active seed, and a proper soil. The same is true of a disease germ. All debilitating causes by lowering the powers of resistance furnished a favorable nidus for the development of the tubercle bacillus. War should be waged on the bacillus, and we should try to exterminate it by all possible means, as well as destroy the sputum; the disinfection of rooms occupied by consumptives was important, and a rigid inspection of milk and meat in spite of the claims of Professor Koch. Marriage of consumptives should be prevented. All places where numbers congregate should receive special attention, and the general public, when once informed, would become a most powerful auxiliary in the crusade against tuberculosis.

Dr. Jesus Chico, of Mexico, read a paper in which he detailed some observations tending to prove that the meat and internal organs of tuberculous animals brought about the appearance of tuberculosis in the persons who ate them.

The British Congress on Tuberculosis.

Dr. Frederick Montizambert, Director General of Public Health of Canada, read a paper on this subject, in which he laid great stress on the curability of the disease, if taken in time, and all agreed in regarding human sputum as the chief medium of infection. He stated that the feature of the Congress was the address by Dr. Koch, more particularly that part dealing with the alleged non-identity of bovine and human tuberculosis, and the non-transmissibility of the disease. The feeling throughout the Congress seemed to be that the statements of Koch were made prematurely and upon insufficient data. The position of eminent authorities who criticised Dr. Koch's announcement was essentially uniform.

After the reading of Dr. Montizambert's paper, there was a general discussion on the subject of tuberculosis, which was participated in by several members of the Association.

Dr. Chico, of Mexico, read the paper of Dr. Francisco Berbaldez, on "Remarks Intended to Show the Character of Human Vaccine as a Preventive of Smallpox."

At the Tuesday evening meeting, Mr. Ansley Wilcox, Buffalo, delivered an address of welcome, in which he paid a glowing tribute of affection and respect to President McKinley.

President's Address.

Dr. Benjamin Lee said that among the problems with which the Association had to deal was that of the protection, safety and welfare of the community against the possible infection of leprosy; that the moral leper was sometimes infinitely more dangerous than the physical leper. The anarchist was the moral leper, and it was high time that we undertook to limit the spread of this, the most horrid of all infections.

The next meeting was held on Wednesday, September 18, at which time reports were read of the Committee on Pollution of Public Water Supplies, Etiology of Yellow Fever, and cases of yellow fever observed on the two coasts of the Mexican Republic, from September 17, 1900, to August 31, 1901.

Yellow Fever.

Dr. Walter Reed, Washington, D. C., said in part as follows: "We were able under strict rules of isolation to bring about an attack of yellow fever in 10 non-immune individuals out of a total of 13 by means of the bites of mosquitoes—the stagomyia fasciata—that had previously been fed with the blood of yellow fever patients during the first, second and third days of their attacks. We were thus able to establish in the most practical manner that the mosquitoes serve as the intermediate host for the parasite of yellow fever. At the same experimental station we were able to demonstrate that yellow fever can not be induced through contact with the clothing and bedding of yellow fever patients, even though these articles had been previously thoroughly soiled with the excreta of such patients."

Dr. Reed then described in detail the mosquito which carried the infection of yellow fever, as to its history, method of propagation, habitat, breeding-places, method of generation, and measures that should be taken to prevent them from infecting healthy individuals and guarding the sick against bites of these insects. He said the life of this mosquito was about five days, if deprived of water, and if a voyage at sea had consumed more than that time, the mosquitoes contained in the hold of the vessel would have perished unless they had access to water, or moisture, and the danger of infection lay not in the cargo or personal baggage, but in the individual sick with the disease. In 1901 there was a reduction of 83 per cent. in yellow fever in the City of Havana.

A paper was presented by Dr. A. H. Doty, Health Officer of the Port of New York, dealing with the practical methods of quarantine necessary in view of the changes in our belief in regard to the necessity of disinfection in yellow fever.

A recess was then taken until 3 p. m., at which time resolutions were adopted to the effect that every effort should be made by sanitarians to diminish the mortality of tuberculosis; that sufficient facts have not been offered by Professor Koch to prove that human and bovine tuberculosis are different diseases; that municipalities regulate against expectoration; that they should compel notification by physicians of cases of tuberculosis; that they should establish municipal sanatoria for the benefit of persons in families of limited means; that tenements, factories, workshops, schools and other public institutions should be inspected in order to promote cleanliness, ventilation and other sanitary conditions.

A paper was read by Dr. Georgas, covering about the same ground as the one submitted by Dr. Reed.

A general discussion of the subject of yellow fever was then indulged in by the members of the Association, and some of the members, among them Dr. Formento and Dr. Wasdin, dissented from the views expressed in the paper of Dr. Reed. They maintained that yellow fever was probably transmissible by fomites. However, Dr. Reed in his closing remarks on the subject was very sanguine of the position he had taken, and claimed that the experiments conducted in Havana were absolutely conclusive.

Several reports were submitted during the afternoon, among which was the report of the Committee on the Relation of Forestry to the Public Health, by Professor William H. Brewer, New Haven, Conn.; also a report on Bacterial Purification of Water by Freezing, by Mr. H. W. Clark, Boston, Mass. Professor S. H. Woodbridge, Boston, submitted the report of the Committee on Car Sanitation.

Dr. A. Walter Suiter, Herkimer, N. Y., read the report of the "Committee on the Cause, Prevention and Duration of Infectious Diseases." This was followed by the report of the Committee on Disinfectants and Disinfection, by Dr. Hibbert W. Hill, of Boston, Mass., after which there was a short discussion on them.

On Thursday, the third day of the meeting, there was no business transacted, but the President called the meeting to order at 10 o'clock as usual, at which time resolutions of sympathy and regret in regard to the death of the late President McKinley were passed unanimously by a rising vote.

Drs. William Bailey, of Louisville, and C. P. Wilkinson, of New Orleans, made short speeches on the resolutions, which were very appropriate and much appreciated, after which the Association adjourned until Friday morning at 10 o'clock.

Dr. Juan Brena, of Zacatecas, Mexico, read a paper on "Notes on the Necessity of Attending to the Hygiene of the Mouths of Pupils of Schools." The author stated that the bacillus of Koch had a predilection for the buccal cavity of the mouth, which favored greatly its multiplication. He said it had been demonstrated that whatever the form might be of oral sepsis, it was susceptible of causing all the phlegmoses connected with the local organism. Many cases of septic diseases of the mouth were due to the dental caries and to that alone.

Dr. Frank W. Wright, New Haven, Conn., read a paper on "The Influence of School-Life Over Health." The author said, in part, that the first principles of school hygiene were embodied in the sites for the building, construction and furniture. With proper care natural ventilation was superior to artificial ventilation. Some of the diseases affecting children were near-sightedness, diseases of the spine, disorders of the digestive system, tonsillitis, consumption and contagious diseases. Nervous diseases were not at all infrequent and affected the teachers as well as the pupils. Impure air, defective light and mental strain were the principal causes of these troubles. Many failures were due to the long hours. The exercise and refreshment taken during intermission were not of the right nature and the lunches were sometimes made up of sweets and other indigestible food.

Dr. Guzman, of Mexico, followed with a paper along the same lines, entitled "Hygiene in Its Relation to the Primary School," and among other things he said that aid to the physician must come from the teacher. In his belief teachers should be trained to help the inspecting physician so as to be able to discover diseases produced by ill-directed school-work, contagious diseases in the school, examination of the physical condition of pupils at the time of their entrance to school, and at regular intervals thereafter.

Dr. Luis G. Espinoza, of Vera Cruz, Mexico, read a paper on "Cremation in Its Relation to Sanitary Legislation." He divided the subject into three parts: 1, the merits and demerits of cremation; 2, the establishment of hygienic regulations in cemeteries, and a discussion of their respective value; 3, he concluded in favor of compulsory cremation in contagious diseases.

There were several reports of committees and a few papers which were not read, owing to lack of time, as there were no sessions held on Thursday, but these papers and reports will appear in the official proceedings of the Association.

The following officers were elected for the ensuing year: President, Dr. Henry D. Holton, Brattleboro, Vt.; first vice-president, Dr. Walter Reed, U. S. Army; second vice-president, Dr. Jesus Chico, Guanajuato, Mexico; secretary, Dr. Charles O. Probst, Columbus, Ohio; treasurer, Dr. Frank W. Wright, New Haven, Conn. New Orleans, La., was selected as the place for holding the next annual meeting, but the exact date was not determined.

SAN FRANCISCO MEDICAL SOCIETY.

Regular Meeting, held Sept. 10, 1901.

The President, Dr. George H. Evans, in the Chair.

Cardio-Vascular System in Diabetes.

Dr. George E. Ebright presented a paper on this subject. The alkalinity was said to be much diminished, especially during coma; fat was frequently increased in the blood. The red corpuscles may be broken down into a granular material and glycogen may be demonstrated in them. The number of red cells is diminished at first, because sugar in the blood draws water from the tissues into the vessels, thereby diluting the blood. Increased diuresis soon frees the blood from an excess of sugar and water and so causes concentration. Thus the blood counts will differ within wide limits.

Pericarditis occurs sometimes and the myocardium is often pale and soft, often hypertrophied and in advanced cases marked fatty degeneration is present; glycogen is present, being found between the muscular bundles. Endocarditis with valvular changes is rare.

Arteriosclerosis is seen in long-standing mild cases, but if the sugar is not constant in the urine the vessels seem to suffer less. In the train of these arterial changes follow a number of important secondary conditions. In the brain may occur apoplexies or cerebral softening. There may be transient hemiplegia, monoplegia, aphasia, vertigo of a simple form or associated with a slow pulse and syncopal or epileptiform attacks. The condition of the vessels and kidneys are likely to account for the failure of the heart and the attacks of asthma and angina pectoris. Diabetic *gangrene* is due to arteriosclerosis or to nerve changes, the former being the most potent cause. Intimately associated with the sclerosis of the vessels are the changes in the liver, pancreas and the kidneys. There are seen in these organs in the severe cases, deposits of iron pigment about the vessels due to the destruction of the red blood corpuscles. This hemochromatosis is assigned as a cause of cirrhosis of the liver and the pancreas resulting in diabetes. Cirrhosis is either of the atrophic or hypertrophic type, is particularly apt to occur in those cases in which there is passive congestion from cardiac failure. On account of such changes in the liver and pancreas atheroma has been called a cause of diabetes.

In conclusion, it may be stated that the subjects of arteriosclerosis should be viewed as possible victims of diabetes, especially if they present any of the usual symptoms of the disease. In the event of failing to discover sugar in the urine 30 grams of glucose may be administered. Failing then to obtain a temporary glycosuria one should feel content that there was little likelihood of being subjected to the humiliation of having some more fortunate observer arrive at a proper diagnosis which in an intermission a single test had failed to reveal.

Dietetic Treatment of Diabetes.

Dr. E. O. Jellinek drew attention to the latest conclusions concerning the circulation of sugar in the blood, according to the recent investigations by Kolisch and others. These investigators have proven that by far the largest part of sugar circulating in the normal, as well as in the diabetic blood, is not pure dextrose, but is a combination with lecithin, forming probably jecorin, and as such is not excreted by the kidneys, sugar appearing in the urine only when either the increase of sugar in the blood is too great to be combined with the available lecithin or if from any reason a decomposition of the jecorin occurs, which results in the liberation of sugar. The work of these investigators would seem to show that diabetes is not a lower assimilative power of the cells, but a pathologic state, in which the protoplasm of the cells separates its own sugar, and the ingestion of food under such pathologic conditions causes an irritation of the cell, in consequence of which sugar is separated, the amount depending upon the intensity of the irritation.

In the grave form of diabetes meat should be interdicted, and the patient placed on an absolute vegetable diet; green vegetables are best adapted for this purpose, and should be boiled with large quantities of water, as they lose part of their sugar through boiling; after this they can be prepared with large quantities of fat. The experience of Kolisch shows that by this form of food carbohydrates can gradually be permitted. In addition, the following is also allowed: Eggs, milk (buttermilk preferred) up to one liter, butter, cheese (cream cheese), fresh fruit, grapes excepted; moderate quantities understood.

If in the milder forms meat be permitted once or twice a week, it is to be boiled, and never more than 200 grams daily be allowed.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Twenty-seventh Annual Meeting, held at Put-in-Bay Island, Ohio, September 12, 13 and 14, 1901.

President Dr. A. H. Cordier, Kansas City, Mo., in the Chair.

(Concluded from page 851.)

Address in Medicine.

Dr. Frank Billings, Chicago, selected for his subject, "What Are the Qualifications Necessary for the Success of the Practice of Medicine?" He said that the qualifications of success, in any walk in life, depended upon the meaning of the word success. Not uncommonly success meant to the majority of mankind the acquisition of wealth. Without a living income life was too full of anxieties to allow one to do good work. The average physician, said the speaker, probably received less compensation for his services than any other member of society, when one considered the time and money spent in preparation, the responsibilities assumed, and the character of the service rendered to the patient. To-day the problems in medicine were so profound that a good preliminary education was necessary to enable the student to pursue the study of medicine rationally and successfully. While a college or university education might not be essential to fully prepare one for the study and comprehension of medicine, still it gave one broad culture, a discipline of mind, which added to the pleasures of life of the practitioner, if it did not bring him material advantage.

Dr. A. M. Phelps, New York, discussed the subject of tubercular disease of the spine, lateral curvature of the spine, and the proper treatment of each.

Congenital Valvular Obstipation.

Dr. Thomas Charles Martin, Cleveland, said this was the result of embryological hyperplasia or overgrowth of the rectal valves, which was characterized by an abnormal depth of the valve, or to such anatomical propinquity of two valves that they overlap and establish under the pressure of the descending force a temporary diaphragm. The symptoms were more or less straining for defecation of solid or semi-solid feces, which developed at an early period and continued.

Varicose Veins and Their Treatment

Dr. J. Lively Johnson, Louisville, Ky., said that varicose veins of the first degree were of little importance, aside from the mental anxiety of the patient, but as the varicosity advanced, the veins assumed a more grave character and were often a source of annoyance to both patient and surgeon. A varicosity might exist in any part of the body. This condition of the veins was found most frequently in certain localities, as the pampiniform plexus and in the veins of the foot, leg and thigh. One of the greatest dangers to the patient suffering from varicose veins was the danger of a sudden rupture, with perhaps fatal loss of blood. Inflammation and thrombosis might frequently occur. The only rational line of treatment to be pursued in the management of varicose veins, in whatever locality, was, as near as possible, to completely remove by extirpation the entire diseased vessels. The surgeon had the choice of a number of operations for the radical cure of varicose veins of the lower extremity. He must be able to adapt the surgical procedure to the case in point.

Use and Limitations of the Elastic Ligature in Intestinal Surgery.

Dr. Theo. A. McGraw, Detroit, said that the elastic ligature was the most advantageous method of making intestinal anastomosis in cases of pyloric stenosis, and of ulcer of the stomach, in chronic partial stenosis of the intestine, and in certain forms of gangrenous hernia. It could rarely be used to advantage where it was necessary to excise any portion of the intestine. Rules were given for its use, and an exhibition of the proper method.

Dr. H. O. Walker, Detroit, reported cases of intestinal resection and approximation by the Connell suture, and contrasted it with other methods of approximation. He spoke highly of this suture, and recommended its use.

Surgical Features of Typhoid Fever and Dysentery.

Dr. Hal C. Wyman, Detroit, held that early operations for perforation in typhoid fever gave the best results. Physicians should anticipate perforation and intestinal hemorrhage in typhoid fever of a severe type by surgical operation, which promised to heal the ulcerated bowel before it perforated or bled. In severe cases of a threatening type, the author said, why not open the cecum near the ileo-cecal valve, establish a fistula through which a tube might be passed cautiously into the ileum and the ulcerated region daily washed with normal salt solution until it healed, and also the colon to rid it of infecting bacteria? When the patient was convalescent, the fistula would close spontaneously.

Some Indications for Gastro-Enterostomy.

Dr. William J. Mayo, Rochester, Minnesota, based this paper on experience derived from 64 operations. In malignant disease gastro-enterostomy was indicated only if symptoms of obstruction were present. The mortality was high, 25 to 30 per cent. The writer lost 4 out of 16 cases. The reason for this mortality lay in the bad condition of the patient. The early cases in good condition needed radical treatment, and the latter operation (pylorectomy, etc.) on this account had an even lower mortality than gastro-enterostomy, which had no such limitations. For open ulcer, gastro-enterostomy was of the greatest benefit if the ulcer was situated near the pylorus, and it usually was. Under such circumstances, the stomach was of normal or increased size, the latter condition being due either to obstruction or pyloric spasm. If the ulcer be distant from the pylorus and the stomach contracted, gastro-enterostomy had less value and the anastomotic opening might close, although the ulcer was usually healed before this took place. The writer had had 13 gastro-enterostomies for open intractable ulcer, with one death. For benign obstruction without regard to origin gastro-enterostomy was the operation of choice, the cure being immediate and lasting. Pyloroplasty enlarged the outlet, but if the stomach was very large and pouched, the degenerated muscle fiber might fail to elevate the food to the pylorus and relief was not always afforded. Gastro-enterostomy drained from the lowest point, and was superior in every way to the plastic operation. In 35 gastro-enterostomies of this class only one died.

Dr. Wm. J. Gillette, Toledo, read a paper in which he reported 100 cases operated on for appendicitis.

Suture of the Abdominal Wall.

Dr. Charles Davison, Chicago, said the main points are, closure of any laparotomy wound by suturing each layer with continuous silkworm gut suture, the ends of which are left out at the angle of the wound, to be removed when healing has occurred. The suture in the strong fascia is tied in position at each end in the fascia with a knot that can be unlocked by traction on the exposed ends when the stitch is to be removed. The advantages of the method are: 1, certainty that all suture or ligament material placed in the wound has been made sterile by boiling in water; 2, accurate layer approximation of tissue; 3, removal of the buried sutures when healing is complete; 4, capillary drainage from each layer; 5, safety of intestines from injury during the application of the sutures; 6, rapidity of application; 7, minimum line of irritation on the peritoneal surface and consequent adhesion to viscera; 8, slight scar in the skin, there being no perforation of the skin by sutures; 9, all of the advantages of a permanent buried suture without the danger of future irritation and extrusion; 10, the advantages of an absorbable suture without the danger of sepsis from the suture and without producing a nidus for septic germs from the blood current during absorption.

Dr. Truman W. Brophy, Chicago, demonstrated some cases of surgery of the palate by the aid of stereopticon views.

Dr. M. L. Heidingsfeld, Cincinnati, discussed some causes of ignored syphilis and their remedies, and gave clinical examples.

Hematology.

Dr. L. H. Warner, New York City, spoke of the imperfect methods of obtaining blood from patients for microscopic examination, and said that the subsequent incorrect methods of fixing and staining specimens had frequently caused errors, the results being of no value as an aid to diagnosis. The incorrect understanding as to the physiologic action of the electro-saline halogen derivatives (iodin, bromin, chlorin), especially as to the amount resorbed (chemical uranalysis), had caused leucocytosis to be wrongfully attributed to other causes. The blood in infectious diseases, if properly obtained and examined in the hot stage, showed certain histologic changes in the red cells, also certain staining affinities which enabled the hematologist to arrive at an early diagnosis in cases of syphilis, carcinoma, etc.

Hay Fever.

Dr. A. D. Murphy, Cincinnati, said three conditions were necessary to produce the complaint, namely, depleted nerve centers abnormally sensitive to uric acid; abnormal condition of the nasal cavities, and atmospheric and climatic conditions.

Consequently, to effect a cure it was necessary to eliminate the uric acid, restore the depleted nerve cells to their normal condition, and relieve the effects. Hot baths and exercise and the careful selection of food were all of importance. As regards medication, he relied principally on a combination of arsenic and solution of gold, supplementing it with local applications of the suprarenal extract, or its active principle, adrenalin.

Scientific Aids to Diagnosis.

DR. HENRY D. HOLTON, Brattleboro, Vt., passed over percussion and ausculation as means of examining the heart and lungs, and simply mentioning the importance of making chemical and microscopic examinations of the urine in cases where the symptoms indicated an abnormal condition of the kidneys, and also those in which the symptoms were vague and uncertain. He proceeded to refer at length to an aid that had not found general favor with the profession, to wit, the use of the ophthalmoscope in many affections of the brain and spinal cord, in which he contended it had been proved to be of great value. He also spoke of the help to be derived from the examination of the blood.

Dentist's Neck.

DR. ALBERT E. STERNE, Indianapolis, portrayed a hitherto undescribed neurosis to which he gave the name of "Dentist's Neck." When it first attracted his attention, he thought the affection was unique, but he had since come to the conclusion that it was by no means rare, and that it sometimes attained the dignity of seriousness to the afflicted individual. As to the pathology of the affection, he admitted that he had to rely largely on conjecture. He believed that it was in many respects analogous to other occupation neuroses, not only in its etiology of regionary overstrain, but also in its cerebral functional character. In all these complaints he considered the peripheral manifestations as secondary to the localized braincell fatigue.

Necessity of and Indications for the Bed-Treatment of the Insane.

DR. F. P. NORBURY, Jacksonville, Ill., said insanity, in its incipient stage, responded readily to treatment, hence the importance of early recognition and appropriate treatment.

DR. HAROLD N. MOYER, Chicago, discussed the subject of "Puerperal Insanity."

DR. JOKICHI TAKAMINE contributed an account of his discovery of the active principle of the suprarenal gland, to which the name of adrenalin has been given. He also explained the mode of preparing the drug.

DR. B. T. WHITMORE, New York, in a paper on "Indian Contributions to Therapeutics," showed that the modern so-called Indian remedies have no connection with any system of medication practiced by the aboriginal Americans.

The Dyspeptic's Diet.

DR. GEORGE D. KAHLO, Indianapolis, contended that diet was a more important therapeutic agent than medicine. Perfect nutrition was of primal import, and could only be maintained by a mixed diet, in which there must be a proper proportioning of the elementary food substances.

Personal Element of Error in Therapeutics.

DR. GEORGE F. BUTLER, Alma, Mich., said the personal elements of error are accepted in all the exact sciences, not excluding astronomy. In medicine this element does not receive allowance, except to some slight degree in histology, pathology and neurology. It is practically neglected in therapeutics. This is due to the crude empirical methods employed, and the lack of judicial training. The personal element leads to the eulogy of worthless remedies and the ignoring of unusual effects of beneficial ones. The early but ignored recognition of the uselessness of sarsaparilla by Weir Mitchell illustrates this. Only the recognition of this personal element can render therapeutics scientific. The elements involved are proper diagnosis, not merely of the disease, but of its type, recognition of individual peculiarities of the patient, recognition of the proper preparation of the remedy, recognition of its untoward effects, and, finally, recognition of the fact that pathologic states indicate a new force introduced into the organism which disturbs its balance.

The Acquirement of Nervous Health.

DR. F. SAVARY PEARCE, Philadelphia, discussed the pathogenesis of nervous and mental diseases, and from the standpoint of salient signs and symptoms of the so-called "nervous breakdown" in the earlier periods of development, detailed medical guidance in prophylaxis. Insistence is made upon the urgent necessity of more serious recognition by the profession of the points elucidated in the paper, if the wear and tear of modern exacting American life is to be forestalled in its baneful influence upon the acquired nervous temperament of many, and of business men in particular, in the temperate zone of the United States. Cases cited and good results given.

A short symposium on tuberculosis was introduced by Dr. Charles F. McGahan, Aiken, S. C., who dealt with the treatment of the disease in the patients' homes. He was followed by Dr. Howard, Champaign, Ill., who reported favorably on the treatment of tuberculosis with formaldehyde and its salts. Dr. William A. Dickey, Toledo, Ohio, who read the third paper in the series, spoke on the attitude of the profession toward the public and the individual suffering from tuberculosis.

The evil effects of alcohol were discussed in papers by Dr. T. D. Crothers, Hartford, Conn., and Dr. T. B. Greenley, Meadow Lawn, Ky. Dr. Charles H. Shepard, Brooklyn, in a contribution on "Auto-Intoxication and Its Treatment," entered a plea for the greater use of Turkish baths. Dr. Ernest Gallant, of New York, narrated his observations on a tripartition in the study of the female pelvis. Dr. N. Stone Scott, of Cleveland, showed stereopticon slides from original photographs, illustrating the anatomy, embryology, histology, comparative anatomy and pathology of the appendix.

Dr. Reginald A. Sayre, of New York, delivered the "Address on Surgery." He reviewed the status of surgery during the past and noted the changes that have taken place in men, methods and modes of thought, and speculated on the position which surgery would attain during the next one hundred years.

After election of officers, and the passing of resolutions on the death of President McKinley (see last week's issue, p. 792) the Association adjourned to meet in Kansas City, Mo., in 1902.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

The Treatment of Whitlows.

The following treatment has been recommended for the treatment of felon: The felon should first be incised deeply and aseptic gauze saturated in the following solution introduced into the open wound as deeply as possible, over which a compress of a solution of plumbi acetas is applied:

℞.	Iodi (pure)	ʒiiss	10
	Tinct. iodi		
	Tinct. rhatany āā	ʒi	4
	Pot. iodidi	ʒss	2
	Glycerini	℥i	32

M. Sig.: For external use as indicated above.

It is stated that this treatment will cause suppuration to cease immediately and healing of the wound in a very few days.

Treatment of Purulent Pleurisy (Empyema).

It is recommended by Capitan, in *La Méd. Mod.*, that all fluid possible be removed by aspiration; if the cavity refills, remove the fluid again and inject a few drops of camphor and beta-naphthol, equal parts, or some peroxid of hydrogen. If this does not stop pus formation an opening should be made under *cocain* anesthesia and drainage established. He thinks the removal of a rib to be unnecessary. To avoid cardiac and respiratory disturbances resulting from the removal of the pressure in the cavity, he recommends the following in the form of an injection.

℞.	Cocainæ hydrochloratis	gr. iss		09
	Morphinæ hydrochloratis	gr. ¾		05
	Sparteinæ sulphatis	gr. iii		18
	Atropinæ sulphatis	gr. 1/3		02
	Aq. destil.	ʒiiss	10	

M. Sig.: Inject fifteen to thirty drops hypodermically as heart stimulant and to allay the cough.

As a substitute the following may be employed as soon as the fluid is removed:

℞.	Sparteinæ sulphatis	gr. ¾		05
	Caffeinæ citratæ	gr. iii		18
	Sodii benzoatis	gr. iii		18
	Aq. destil.	m. xv	1	

M. Sig.: Use the entire amount hypodermically.

Treatment of Varicose Ulcer.

A powder composed of the following is of great service in treatment of ulcers as result of broken-down varicose veins:

℞.	Iodol.	ʒiv	16
	Zinci oxidi	ʒii	8

M. Sig.: Dust freely upon the affected part and apply the dressing, which should be changed every other day.

The following is also recommended under the same circumstances:

℞.	Ichthyol	ʒi	4
	Gelatini	ʒii	8
	Zinci oxidi	ʒi	4
	Glycerini	ʒiii	12
	Aq. destil.	℥ss	16

M. Sig.: Heat the above and paint on the ulcer, first cleansing the ulcer with an antiseptic solution and drying.

Treatment of Rheumatic Synovitis.

℞.	Sodii salicylatis	ʒiv	16
	Sodii iodidi	ʒiv	16
	Aq. menth. pip.	℥vi	192

M. Sig.: Two teaspoonfuls in water four times daily.

The following applied locally will be absorbed:

℞.	Methyl salicylatis	ʒiv	16
	Lani	℥ii	64

M. Sig.: Apply to the affected joint on lint, night and morning.

Proper Method of Bandaging Diseased Breasts.

Harris, in the *Annals of Gyn. and Ped.*, makes the statement that inflammation of the nipple and breast should be regarded as a progressive rather than a self-limited disease, arising in most instances from septic infection of the nipple. Bandaging is regarded by him as advisable after mastitis, stillbirth, and whenever weaning is necessary on account of mammary disorders. It is recommended by him that the bandage be used in cases of infection of both breasts, and where nursing must be entirely stopped. In applying his bandage, when only one breast is involved, he uses a roller bandage two and a half or three inches wide and nine or ten yards in length. Both breasts are protected by absorbent cotton. Beginning beneath the breast affected the bandage is passed twice around the body, then under the affected breast and over the opposite shoulder, then around the body again and underneath the breast and over the same shoulder. It is then brought again under the affected breast and passed around the chest above the sound breast and immediately over the affected breast and above the sound breast and continued until the affected breast is entirely covered, and finally over the shoulder again. It must then be kept in place with safety pins in the back, sides, and front. An opening may be made so that the infant may have access to the sound breast.

Bacon, of Chicago, recommends for supporting the breast and putting it at rest a bandage six or seven inches wide. In applying this bandage the breast must be raised, not compressed; with the patient lying on her back, the bandage under her, the nurse takes hold of one end of the bandage and draws the breast up to the middle of the chest, holding it there with the bandage. The other breast is raised and held in the same way, after which the bandage is fastened by several safety pins, the lower border being drawn more tightly than the upper. Strips of bandage may extend over the shoulders to hold this bandage in place. His method of applying the double Y bandage is more efficient than the one just described. It is made of strong cotton cloth, consisting of a back piece four or five inches wide and from fourteen to twenty inches long. To each end are sewed two diverging strips, each four or five inches wide and thirteen inches long. The lower limbs of the Y's which pass under the breast are fastened together with safety pins; in the same manner the upper and lower limbs of the Y's are fastened in front with safety pins to support the inside of the breasts. With this bandage the nipple of the sound side may be left free for the infant.

Treatment of Pruritus Vulvae.

L. Siebourg, in *Centralblatt f. Gyn.*, states that the removal of causative factors is imperative. An exact uranalysis should be made. The diet should be regulated. Alcohol and highly seasoned foods should be interdicted. Rubbing or scratching of the vulva should be prohibited. The diseased parts should be washed with water and pure soap after each urination. The following should be applied to give relief from the itching:

℞.	Cocainæ	gr. xxx	2	
	Orthoformi	gr. xxiv	1	50
	Menthol	gr. viiss		50
	Acidi carbol.	gr. xv	1	
	Vaselini	ʒv	20	

M. Sig.: Apply locally to relieve the itching.

Generalized Pruritus.

J. F. Schamberg, in *Ther. Gazette*, recommends the following to be taken internally in cases of chronic pruritus over different parts of the body:

℞.	Acidi carbol.	ʒss-ʒi	2-4
	Glycerini	ʒi-ʒii	4-8
	Vini xerici, q. s. ad	℥iii	96

M. Sig.: One teaspoonful after each meal.

Dr. Schamberg states that he employed the above treatment in several cases of general itching which extended over several months, with improvement in all cases and cure in some of them.

Treatment of Locomotor Ataxia.

Dr. S. Leduc, in *Gazette Médicale de Nantes*, stating that in tabes dorsalis, dependent upon a history of syphilis, has injected into the gluteal region of the patient the following:

℞.	Hydrarg. chloridi, corros.			
	Sodii chloridi (recrystall.) āā	gr. iii		20
	Aq. destil.	ʒv	20	

M. Sig.: Inject about thirty drops daily into the thigh.

Sodium Formate in Pneumonia.

Polenov, as noted in *La Semaine Med.*, recommends the following in modifying the fever and shortening somewhat the duration of the illness:

℞.	Pulv. adonis vernalis (folia)	gr. xxx	2
	Aq. bulientis	℥vi	182

Ft. infusio. Filter and add:

Sodii formatis	gr. xxx-ʒi	2-4

M. Sig.: One tablespoonful every two hours, day and night.

Sodium formate is a white deliquescent crystalline salt, soluble in water or glycerin.

Pityriasis of Face and Eyebrows.

The following is recommended in treatment of this affection as noted by *New York Med. Jour.*:

℞.	Lithii benzoatis	gr. xv	1
	Tinct. benzoini	ʒss	2
	Glycerini	ʒss	2
	Tinct. eucalypti	ʒi	4
	Aq. rosæ	℥i	32

M. Ft. lotio. Sig.: Apply locally night and morning.

Medicolegal.

Skull and Photograph Admissible in Evidence.—The Supreme Court of Nebraska holds, in Savary vs. State, that when physicians called as experts in a criminal trial for murder, in testifying to the manner and cause of death, refer to and use the skull of the deceased and a photograph thereof in explanation and as a part of their testimony, it is not erroneous to admit the exhibits as evidence in the case.

Proof on Insanity to a "Reasonable Certainty."—The Supreme Court of Georgia says, in Minder vs. State, that in order to sustain the independent defense of insanity at the time of the commission of an alleged criminal act, it is incumbent upon the accused to prove that he was insane at that time; and it holds that an instruction that he must prove this to a "reasonable certainty" is not erroneous, when the jury are distinctly informed that a preponderance of the testimony is all that is requisite to establish such reasonable certainty.

Ground for Annulment of Marriage to a Syphilitic.—While the Court of Chancery of New Jersey says, in the case of Crane vs. Crane, that to annul a marriage for a fraudulent representation inducing the contract, it must be shown that the fraud affected an essential of the marital relation, it holds that an explicit statement by a man about to be married that he was not afflicted by the loathsome disease called "syphilis," made when it was his duty to state the truth, and knowingly false, is such a fraudulent representation as affects an essential of the marital relation, and warrants an annulment of the marriage for fraudulent representation.

Court Terminates Lengthy Malpractice Litigation.—In the late appeal from a judgment for the plaintiff in the malpractice case of Margaret Leach Barker vs. Lane, the Supreme Court of Rhode Island says that the verdict was clearly against the evidence. Whether the defendant used proper professional skill and diligence in treating the plaintiff's arm was a question which must be determined by the testimony of experts in medicine and surgery. A number of these were called, some by the plaintiff and some by the defendant, and they all substantially agreed that the method of treatment adopted by the defendant was professional and proper. Taking their testimony in its strongest light in favor of the plaintiff, it only showed an error of judgment on his part in treating the arm; and such an error, merely, the court holds, is not enough to sustain an action of this sort. Continuing, the court says that the treatment of which the plaintiff complained occurred in 1892, but no action therefor was brought until in 1895. The case has now been tried five times, with varying results; and in 1897 a verdict for the plaintiff was set aside by the court for the same reason that the present verdict is set aside. The declaration has been repeatedly amended, and at least four of the original witnesses are now dead. Then the court adds that it is of the opinion that the plaintiff, after the lapse of nearly nine years, must be presumed to have presented all the evidence which is now available in her behalf, and that the interests of justice will not be subserved by a further prolongation of this litigation. "It concerns the state that there be an end of lawsuits." Wherefore, the Supreme Court remands the case with direction to enter judgment for the defendant.

Communications to Volunteer Physician Privileged.—After a boy who had been injured by a street car was taken to a drug store, one of the surgeons employed by the street car company went in to see him, and volunteered his services to stop the flow of blood until the ambulance arrived. He subsequently saw the boy at the hospital 10 days after the accident. The boy was then in bed in the ward, and the doctor asked him to tell the details of his accident, to which the boy made reply. Now, he certainly, while thus attending to the boy to stop the flow of blood, the first appellate division of the Supreme Court of New York holds, case of Griffiths vs. Metropolitan Street Railway Company, occupied to the boy the relation of physician, and when he subsequently went into the hospital, after the amputation of the boy's leg, and asked him questions as to the accident, the boy was justified in treating him as a physician who had attended him. Continuing, the court says that his going to the hospital, having no previous acquaintance with the boy, no interest in the case except in his professional capacity, and attempting to obtain from him declarations as to the accident, was unauthorized and impertinent. Declarations made by the person thus severely injured, made to a physician under such circumstances, would certainly be privileged. Except as a physician, he had no business in the hospital. He did not inform the boy that he came as a representative of the street railway company, and for the purpose of extracting from him an admission which would tend to relieve the company from liability. Under such circumstances, the boy was quite justified in considering a person who thus addressed him as a physician, and in answering his questions freely and frankly, without considering that his answers would be used against him as admissions. Wherefore, the court holds that the testimony of the physician was correctly excluded, on the trial of the action against the company.

Risks Taken by Patient in Charitable Hospital.—The United States Circuit Court of Appeals, First Circuit, has affirmed, in the case of Powers vs. the Massachusetts Homeopathic Hospital, the decision of the Circuit Court reported on page 899 of The Journal of Oct. 6, 1900. In other words, it holds that a patient admitted to a hospital maintained for charity can not recover judgment against the hospital for injuries caused by the negligence of a nurse employed therein. It considers it immaterial, too, that the patient in this case was what is sometimes called a "paying patient." That the ministrations of a hospital organized as a charitable corporation, that is, exclusively for charity, should be confined exclusively to the indigent, it says, is not usual or desirable. Those of moderate means from necessity, and not a few rich people from choice, resort to great charitable hospitals for treatment, especially in surgical cases. Throughout the world this is the custom in these institutions, whether they are maintained by individual, religious, or municipal charity. From patients who are not indigent, a payment is commonly permitted or required. Commonly, this payment does not make full pecuniary compensation for the services rendered. Those who make a considerable payment not infrequently receive in some respects a more expensive service than do those who make a small payment or none at all; but the payment required is usually calculated upon the patient's ability to pay, rather than upon the whole cost of the treatment he receives. That was plainly the rule of the hospital in this case, and the court is of the opinion that a paying patient in it, as well as a non-paying patient, seeks and receives the services of a public charity. That such a hospital in its treatment of a rich patient should be held to a greater degree of care than in its treatment of a pauper is not to be tolerated. Certain luxuries may be given the former which the latter does not get, and this for various reasons; but the degree of protection from unskilled and careless nurses must be the same in both cases. Again, the court says, it would be absurd to make the hospital's liability for an accident, such as the burning of a patient with a hot water bag, depend upon the payment of that insignificant proportion of the cost of the service rendered which in some cases may properly be required from a poor man or woman. So the court is of the opinion that this case stood as if the patient had been admitted without any payment whatsoever, instead of with an agreed one of $14 a week. Then it holds that one who accepts the benefit either of a public or of a private charity enters into a relation which exempts his benefactor from liability for the negligence of his servants in administrating the charity; at any rate, if the benefactor has used due care in selecting those servants. To paraphrase the illustration used by the Circuit Court, it would be intolerable, it says, that a good Samaritan, who takes to his home a wounded stranger for surgical care, should be held personally liable for the negligence of his servant in caring for that stranger. Were the heart and means of that Samaritan so large that he was able, not only to provide for one wounded man, but to establish a hospital for the care of a thousand, it would be no less intolerable that he should be held personally liable for the negligence of his servant in caring for any one of those thousand wounded men. And the court can not perceive that the position of the hospital in this case differed from the case supposed. The persons whose money has established it are good Samaritans. The purity of their aims may not justify their torts or wrongful acts, but, if a suffering man avails himself of their charity, he takes the risks of malpractice, if their charitable agents have been carefully selected.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

American Medicine (Philadelphia), September 21.

1 *The Significance and Treatment of Floating Kidney in Women. Henry D. Beyea.
2 *Wounds of the Thoracic Duct Occurring in the Neck; Report of Two Cases; Résumé of Seventeen Cases. (Concluded.) Dudley P. Allen and C. E. Briggs.
3 The Practical and Scientific Value of the Blood Examination to the Medical Man and Surgeon. (Concluded.) Robert N. Willson.
4 *The Therapeutic Value of Alcohol. Leon L. Solomon.

New York Medical Journal, September 21.

5 *The Lane Lectures on the Social Aspects of Dermatology. Malcolm Morris.
6 *The Clinical Diagnosis of Carcinoma of the Esophagus and the Technics of Gastrostomy. (Concluded.) Charles G. Cumston.
7 A Study of the Temperature, Pulse, and Respiration in the Diagnosis and Prognosis of Certain Diseases of the Brain. (Continued.) J. T. Eskridge.
8 Conjunctivitis from X-rays; Incipient Retinitis Apparently Due to the Same Cause; Report of a Case. J. W. Sherer.

Medical Record (N. Y.), September 21.

9 *Pathological Physiology of the Animal Heat Economy and Its Relation to the Modern Theories of Fever. Isaac Levin.
10 Foreign Bodies of the Nose and Ear. Percy Fridenberg.
11 *Some Ultimate Results of Gunshot Wounds Caused by the Mauser Bullets During the Late Spanish-American War. Medwin Leale.
12 *A New Operative Procedure for Treating Inflammation of the Posterior Part of the Eye. S. Busby Allen.
13 *The Disadvantages of Copper Sulphate in Diseases of the Conjunctiva and Cornea. Cornelius Williams.

Philadelphia Medical Journal, September 21.

14 *The Deleterious Results Following Operations in Hypochondriasis, Performed for the Sake of Mental Impression. A. Pick.
15 *Concerning the Treatment of the Apparently Unaffected or at Most but Slightly Involved Eye in Cases of Glaucoma. G. E. de Schweinitz.
16 *An Improved Lantern for Detecting Color-Blindness, to Supplement the Deficiencies of the Wool Tests. William Thomson and Archibald G. Thomson.
17 *Light and Radiance in the Treatment of Disease. George G. Hopkins.
18 *Discussion on the Therapeutic and Diagnostic Value of Tuberculin in Human Tuberculosis. G. A. Heron.

Boston Medical and Surgical Journal, September 19.

19 *The Use of Gynecology by the General Practitioner. (Concluded.) Edward Reynolds.
20 *Movable Kidney; with Special Reference to Its Consequences and Its Etiology: with the Report of Postmortem Observations Made by the Writer in Some Cases of Movable Kidney. Francis S. Watson.
21 *A New Factor in the Etiology of Visceral Ptosis: The Relation of the Modern Corset to This Factor; a Preliminary Communication. Agnes C. Vietor.
22 *The Home (Sanitarium) Treatment Versus the Climatic Treatment of Consumption. Vincent Y. Bowditch.
23 *Eosinophiles as Constituents of Pus. Edward T. Williams.

Medical News (N. Y.), September 21.

24 The Case of the President.
25 *Disappearing Tumors. A. S. Warthin and W. A. Spitzley.
26 *The Dilatation of the Cervix Uteri in Obstetric Practice. Henry J. Garrigues.
27 The Pantherapist and Neotherapeutics. C. H. Kermott.
28 A Case of Double Penis, Combined with Exstrophy of the Bladder and Showing Four Ureteral Orifices. Carl Beck.
29 A Case of Congenital Abscence of Internal Genitals; Fusion of Kidneys; Single Ureter. Allen J. Smith and William Gammon.
30 *A Few Remarks on a Generally Unrecognized Ear Disease (Otitis Media Mucosa). Henry A. Alderton.
31 The Local Treatment of Gonorrhea. E. O. Bardwell.

Cincinnati Lancet-Clinic, September 21.

32 *The Practice of Obstetrics—As It Is and as It Should Be. E. Gustav Zinke.
33 *Position of the Woman During Delivery. Wm. D. Porter.
34 Dermoid Cysts of the Ovary. John A. Grafft.

St. Louis Medical Review, September 21.

35 The Progress of Surgery. Frank L. Lutz.

Medical Fortnightly (St. Louis), September 10.

36 The Anatomy and Function of the Ovary and Some of Its Diseases. Herman E. Pearse.
37 Beri-beri in the Japanese Army. Albert S. Ashmead.
38 Disease of the Stomach. (Continued.) J. M. G. Carter.

Virginia Medical Semi-Monthly (Richmond), September 13.

39 Some Observations Made in Handling Recent Epidemics of Smallpox. J. W. Preston.
40 Suprapubic Cystotomy, with a Report of a Successful Operation Under the Influence of Local Anesthesia with Schleich's Solution. C. G. Cannaday.
41 Report of a Case of Subcutaneous Injection of Paraffin. Junius F. Lynch.
42 Case of Twin Conception; Almost Painless Miscarriage of One Foetus at Seven Months; Other Child Born at Term; One Placenta. J. Prosser Harrison.
43 Medical Treatment of the Diseases of the Kidney. J. N. *Upshur.*
44 Surgical Interest of the Sub-peritoneal Tissue. Hugh M. Taylor.
45 *Some Obscure Injuries Following the Toxic Use of Alcohol. T. D. Crothers.

American Practitioner and News (Louisville, Ky.), July 15.

46 *The Practical Management of Smallpox. M. K. Allen.
47 *Tuberculosis of the Testicle and Epididymis. Irvin Abell.
48 Report of a Unique Case of the Loss of Beard and Hair J. R. *Clarke.*
49 Mitral Regurgitation Produced by the Efforts at Resuscitation in a Partially Asphyxiated Newborn Babe: Report of a Case. Leon L. Solomon.

Medical Age (Detroit, Mich.), September 10.

50 Differentiation of Valvular Cardiac Murmurs. Frank C. Wilson.
51 The Relationship Between Ocular Affections and Systemic Diseases. Frank H. Edsall.
52 The Care of the Aged. Ewing Marshall.

Annals of Gynecology and Pediatry (Boston) September.

53 Studies in the Normal and Pathological Structures of the Ovary. Mary Dixon Jones.
54 Tuft's College Medical School. A. J. Paine.
55 Sanitation of Cuba. A. Bustillo Lirola.

Cleveland Journal of Medicine, August.

56 Acute Anterior Poliomyelitis in the Adult. D. I. Wolfstein.
57 Psychoses of Influenza. Henry S. Upson.
58 Psychoses of Influenza. Robert E. Ruedy.
59 The Cardiac Lesions of Influenza. L. W. Ladd.
60 A Case of Traumatic Rupture of the Spleen. A Case of Gunshot Wound of the Spleen. C. A. Hamann.
61 A Case of Traumatic Tetanus. C. F. Douglass.
62 Report of a Case of Paralytic Club-Foot. Walter G. Stern.

Medicine (Chicago), September.

63 *Chorea; Especially in Relation to Rheumatism and Endocarditis. H. B. Favill.
64 Some Functional Manifestations. Edward B. Taylor.
65 *Is Bovine Tuberculosis Dangerous to Man? E. Fletcher Ingals.
66 Aneurysm of the Recurrent Type. R. B. Preble.

New York State Journal of Medicine (N. Y.), September.

67 The Technic of Aseptic Abdominal Operations. Parker Syms.
68 *Progressive Pernicious Anemia. Alfred Stengel.
69 *Some Remarks on the Pathology and Surgical Treatment of Urinary and Uro-Genital Tuberculosis. Samuel Alexander.
70 Tuberculosis of the Bones and Joints. E. H. Nichols.
71 *Puerperal Sepsis; Its Pathology and Treatment. William R. *Pryor.*
72 Report of Two Cases of Intraspinal Cocainization in Puerperal Eclampsia. Wm. P. Thornton.
73 *Strabismus and Its Management. J. H. Woodward.
74 The Value of Blood Examination in Appendicitis. Albert E. Woehnert.

Brooklyn Medical Journal, September.

75 City Versus Independent Hospitals. Jesse T. Duryea.
76 The Advantage to the Public and the City of the Non-Municipal Hospital. John Harrigan.

77 Church Hospitals. A. C. Bunn.
78 Asthenopia. Heber Nelson Hoople.
79 Interdental Splint for Fractures of the Jaw. J. W. Russell.
80 La Grippe in Children. (To be continued.) W. L. Chapman.
81 Another Plan of State Care for the Insane. W. H. Haynes.

Annals of Ophthalmology (St. Louis), July.

82 *On the Measurement of the Interocular Base Line and the Size of the Meter Angle. Lucien Howe.
83 Carcinomatous Degeneration of a Papilloma of the Conjunctiva with Infiltration of the Eyelids. S. D. Risley and E. A. Shumway.
84 Glioma of the Retina Without Sequelæ. M. W. Zimmermann and Burton K. Chance.
85 *A Case of Tuberculosis of the Conjunctiva. Howard F. Hansell.
86 Clinical Notes on Six Cases of Albuminuric Retinitis. Albert R. Baker.
87 *The Surgical Treatment of Entropion and Trichiasis. Matthias L. Foster.
88 Three Cases of Alcohol-Tobacco Amblyopia Presenting Retinal Hemorrhages. William Zentmayer.
89 Hemorrhage of the Retina. G. Griffin Lewis.

Medical Bulletin (Philadelphia), September.

90 Lupus Vulgaris and Psoriasis. John V. Shoemaker.
91 Aural Pyemia with Dermatomyositis, Without Apparent Thrombophlebitis of the Sinus. L. Bar.
92 Botanical Nomenclature. T. G. Stephens.

Archives of Pediatrics (N. Y.), September.

93 *Pernicious Anemia in Infants, with a Preliminary Report of a Case. T. M. Rotch and Maynard Ladd.
94 *So-called "Cyclical Albuminuria," with Preliminary Report of Case. Frank S. Churchill.
95 *Probable Etiology of Rectal Polypi in Children. Francis Huber.
96 *Lamellar Desquamation in an Epidemic of German Measles or of "Fourth Disease." Frederick T. Simpson.
97 A Case of Chronic Arsenical Poisoning in an Infant of Seven Months. John L. Morse.
98 Pleural Effusion. James Carmichael.

Kansas City Medical Record, September.

99 Bacteria and the Part They Play in Disease. Jos. Clements.
100 Over-Feeding as an Etiologic Factor in the Production of Diseases of the Liver. *John W. Kyger.*
101 Alkaloidal Medication, What Is It? J. Robt. Buchanan.

Medical Dial (Minneapolis), September 1.

102 An Investigation of a Pathogenic Microbe as Applied to the Destruction of Rats. M. J. Rosenau.
103 Sterility in Women. Lewis S. McMurtry.

Journal of Nervous and Mental Diseases (Nyack, N. Y.), September.

104 *A Clinical Classification of Insanity. F. X. Dercum.
105 Dislocation of the Seventh Cervical Vertebra; Clinical History of a Case; Remarks. Frank R. Fry.
106 Three Cases of Hereditary Chorea. C. Eugene Riggs.

New Yorker Medicinische Monatsschrift, August.

107 Zur Erkenntniss und Behandlung der Fruhseitigen Berstung bei Eileiterschwangerschaft, mit betrachtlicher Blutung. H. Banga.
108 Ueber die Bekampfung der Tuberculose. Robert Koch.

Medical Summary (Philadelphia), September.

109 Deafness. Edwin W. Pyle.
110 Synovitis. J. L. Wolfe.
111 Little Things That Should Be Observed by the Physician. C. W. Canan.
112 Cancer and Its Cure. Wm. A. Armstrong.

Cleveland Medical Gazette, September.

113 Opinions in Relation to the Questions of the Special Committee of the American Medical Association Regarding the *Prognosis and Treatment of Acute Gonorrhea in the Male.* Professor Neisser and E. C. Burnett.
114 Two Cases of Syphilis; One with Very Persistent Lesions, the Other Congenital, Without Any Known Lesions in Immediate Family. D. S. Hanson.
115 Remarks on Pelvic Cellulitis. Byron Robinson.
116 Review of Pathological Work at City Hospital for the Past Six Months, with Presentation of Specimens. H. C. Crummrine.
117 Is It Justifiable to Enucleate During the Acute Stage of Panophthalmitis? Edward Lauder.

Dominion Medical Monthly (Toronto), August.

118 Medical Inspection of Schools and the Prevention of Spread of Contagious Diseases. D. Forsyth.
119 The Difficulties in the Diagnosis of Variola. E. R. Secord.
120 On the Importance of an Early Recognition of Locomotor Ataxia—Do the Eye Symptoms Assist Us? J. T. Duncan.
121 A Case of Acute Endocarditis. R. D. Rudolf.

Toledo Medical and Surgical Reporter, September.

122 *How Shall We Treat Convulsions in Children? Wm. A. Dickey.
123 Stomach Washing in the Indigestion and Gastritis of Infants. Report of Five Cases. W. H. Emery.

Maryland Medical Journal (Baltimore), September.

124 *Blood Examinations as an Aid to Surgical Diagnosis. Joseph C. Bloodgood.

Medical Council (Philadelphia), September.

125 *Briefs on the Surgery of the Genito-Urinary Organs. G. Frank Lydston.
126 Disorders of the Sexual Function in Man. A. H. P. Leuf.
127 The Treatment of Alcoholism. John L. Howard.
128 *The Use and Abuse of Narcotics and Hypnotics, with a Clinical Study of a New Hypnotic. W. H. Walling.
129 Case of Tetany in Which Autopsy Revealed Dilated Stomach as a Cause. Ira B. Ladd.
130 Intestinal Antiseptics. W. H. Baldwin.

Columbus Medical Journal, August.

131 Constipation in Infancy and Early Childhood. J. M. Dunham
132 Some of the Emergencies of Labor and How to Manage Them. Edward J. Wilson.
133 Scarlet Fever. C. C. Ross.
134 *Placenta Previa.* H. L. Harris.

Laryngoscope (St. Louis), August.

135 *The Nose and Throat in the History of Medicine. (Continued.) Jonathan Wright.
136 *Subarachnoid Injection of Cocain as a General Anesthetic for Operations upon the Head. Redmond Payne.
137 A Variation in the Technique of Septum Operations. Stephen H. Lutz.
138 Papillomatous Growths of the Soft Palate. Wm. F. Dudley.
139 Traumatic Dislocation of the Left Arycartilage. Henry L. Wagner.
140 Improved Portable Apparatus for Heating and Sterilizing Compressed Air. Charles L. Enslee.

Carolina Medical Journal, (Charlotte), August.

141 The Physician and the Public. F. Julian Carroll.

Georgia Journal of Medicine and Surgery (Savannah), August.

142 Acromegalia. T. L. Cornwell.
143 *Otorrhea—"A Rising in the Head." Wm. Lewis Bullard.
144 Subarachnoid Spinal Cocainization as a Means of Inducing Surgical Anesthesia. Edward N. Liell.
145 Report of Case of Compound Fracture of Lower Jaw. P. R. Cortelyou.
146 Sulphate of Quinin as an Ecbolic. O. B. Bush.
147 An Unusual, and *Probably* Unique, Complication (General Emphysema) of Tracheotomy. E. C. Ellett.

International Journal of Surgery (N.Y.), September.

148 Practical Suggestions upon the Treatment of Rectal Diseases James P. Tuttle.
149 Who Shall Operate? A. C. Helm.
150 Nose and Throat Work for the General Practitioner. (Continued.) Geo. L. Richards.
151 The Operative Treatment of Carcinoma of the Breast—Its Possibilities and Limitations. William F. Campbell.
152 Regional Minor Surgery. (Continued.) George G. Van Schaick.
153 Tubercular Meningitis; Gastro-enterostomy; Benign Tumor of the Breast. William L. Rodman and E. B. Gleason.
154 A Case of Uterine Polypi and Its Treatment. Edmond J. Melville.

Medical Review of Reviews (N. Y.), August 25.

155 *The Etiology of Cystitis.* William K. Otis.

New England Medical Journal (Danbury, Conn.), September.

156 The Progress and Tendency of Hygiene and Sanitary Science in the Nineteenth Century. (Continued.) George M. Kober.
157 Thialion—Its Therapeutic Indications with Clinical Reports. C. W. Canan.
158 Climate for Health. Paul Paquin.
159 Phospho-therapy and Nerve-exhaustion. S. Green.

Southern Illinois Journal of Medicine and Surgery (Metropolis), August.

160 *Malarial Fevers—Their Clinical Aspect and Diagnosis.* C. E. Riseling.
161 Nervous Complications in Acute Diseases. H. P. Sights.
162 A Case of Nephritis—One of My Failures. O. B. Ormsby.
163 Puerperal Eclampsia, with Report of Cases. D. W. Grear.

Mississippi Medical Record (Vicksburg), September.

164 Strangulated Hernia; Report of Two Cases. Louis D. Dickerson.
165 The Transmission of Yellow Fever. H. H. Haralson.
166 Edema of the Lower Extremities: Chronic Malaria. Frank C. Wilson.

AMERICAN.

1. **Floating Kidney.**—The operation here described by Beyea is as follows: A longitudinal incision is made in the lumbar region parallel with and about 4 fingers' breadth from the spinous process of the vertebra, thus close to the anterior border of the spine muscles. It begins just below the last rib and extends downward for a distance of 3½ inches. The skin and fat are divided down to the fascia, the fascia incised, the muscles separated in the direction of their fibers, cutting again through the lumbar fascia and separating the quadratus lumborum muscle. The perirenal fat is exposed and is likewise excised, opening the space of Gerrotta. Then by rolling the patient downward on the Edebohls inflated bag, assisted often by traction of the perirenal fascia and the pressure of the assistant's hand opposite to the incision on the anterior abdominal wall, the kidney is delivered out of the wound. The surgeon then selects a position at the hilum of the kidney in the perirenal fascia which is free from blood vessels, and about one centimeter from the ureter and renal vessels, which he perforated with the blunt end of a dissecting forceps. Then an ordinary rubber drainage tube, previously sterilized and of sufficient length to surround the kidney and protrude for some distance out of the wound when the kidney is replaced, is introduced through this opening made with the forceps and clamped. Similarly, a second tube is introduced below the ureter and vessels and surrounding the kidney. The drainage tubes being surrounded by and passing through an opening in the perirenal fascia at the hilum, are prevented from changing their position and slipping over the convex end of the kidney, or in any way from interfering with the ureter or vessels. The kidney is then replaced, the drainage tubes extending through the incision. The muscle incision is sutured, leaving a small opening for the tubes, with continuous catgut suture, often by two layers of such suturing. The skin wound is closed by an intracutaneous suture, again leaving the same opening. An oblong portion of gauze is now placed over the wound, and over this, with gentle traction, are tied the elastic drainage tubes. The tubes, being elastic and tied with little tension, the kidney tissue can not be restricted or its circulation interfered with. The kidney is secured a little below the normal, and in the most favorable position. The usual dressing and binder are placed over the wound. The first dressing is made at the end of ten days, the silk intracutaneous suture being removed at this time. The tubes, which easily slip out, are removed after three weeks. The wound left by them quickly heals, being completely closed within three or four days. The operation was first planned and practiced by C. B. Penrose and has been performed in eight cases. All the patients have been carefully examined and the kidney found fixed in these, and in all but one the symptoms were entirely relieved. In this one case the patient still suffers from gastroptosis, which it is hoped will be relieved by further operation. After two and one-half years Beyer is thoroughly convinced that the operation can have no deleterious influence and is associated with no danger, and, therefore, in the future will be the operation of election in nephropexy. The rubber tubing, if aseptic, acts simply as a foreign body, causing very mild irritation and never producing excessive adhesions to injure the kidney structure, but just enough to hold the kidney in a fixed position, and the tube tracks heal with the smallest cicatrix.

2. **Thoracic Duct.**—In the former portion of this article appearing in the last number of *American Medicine*, Allen and Briggs described some theoretical and practical questions in regard to thoracic duct injuries and report a number of cases. In this article they give a more detailed study of these cases and offer the following as suggestions to which they have been led: 1. The increasing frequency of extensive dissections in the neck makes it desirable to consider means of avoiding injury to the thoracic duct. 2. It is desirable that if wounds of the thoracic duct or its branches occur, they should be recognized at the time of operation. The ingestion of 4 to 6 ounces of cream 3 hours before operation might be especially desirable in secondary operations undertaken for the purpose of locating the point of injury. The desirability of such a procedure may be further studied by observations made upon animals. 3. That suture of the duct with fine silk or catgut be accomplished where possible; that all small discharging lymph radicles be ligated; that the ligating and clamping of lymphatic vessels of considerable size be avoided, unless the integrity of the thoracic duct itself has been demonstrated; that where suture of the duct or large radicles is impossible, gauze packing, firmly and accurately applied, be used; that the head and neck be kept at rest, the use of morphin to a considerable degree being recommended if necessary. 4. That until repair of the duct is thought to be complete, nutrition should be sustained on albuminous material, with possibly a small amount of carbohydrates, but with an absolute exclusion of fats.

4. **The Therapeutic Value of Alcohol.**—Solomon's article considers alcohol as a medicine, not as a beverage, which he says does not concern us in this discussion. The healthy man does not need alcohol any more than he needs any other stimulant or narcotic and Lawson Tait's statement that a moderate use of alcohol is a necessity in modern times is too bold and in bad taste from a medical man, and dangerous since it comes from so high an authority. He thinks it should be given tentatively, never as a routine medicine. Alcohol is of value as a stimulant, as a conservator of vital power, for supporting the vital powers of life in sudden depression and supplying heat to the system where it is needed, in chronic suppuration and wasting diseases, and locally in many affections.

5. **The Lane Lectures.**—In the second lecture Morris gives an interesting account of the discovery of itch mite, and points out, however, that it had been recognized by early writers, even by Rabelais, though its discovery for practical purposes dates from the early part of the 19th century. While it is a trivial affection of the present day, cured by one or two treatments, it has been a scourge in the past when it was not understood and he gives an account of Napoleon's experience and calls attention to the fallacy of the fear of driving in an eruption which is not completely exploded at the present day. As regards lice, he remarks that these seem to have their preference; for instance, the experiment of Crocker of a half a dozen students around a table on the middle of which was placed a hungry pediculus; in whatever direction the insect was headed, it always promptly made for one particular student. The lowered condition of the system favors their development and the most exquisite dandy who goes to war, where the toilet has to be more or less neglected, will find himself a victim. He remarks on the progress of personal cleanliness in modern times, calling attention to Lady Mary Wortley Montagu, who was a beauty as well as a wit, and had lived in the East where the bath was a religious institution. Yet it is told that, on someone venturing to hint that her hands were not quite up to the not very high standard of cleanliness required by society in those days, exclaimed: "Do you call that dirty? What would you say if you saw my feet?" At the present time, he thinks it is possible we carry the cult of bath a little too far. The flesh brush may be overused and an irritable condition of the skin produced, but he does not recommend the maxim attributed to a German professor that "dirt is a natural protection to the skin" as a precept of cutaneous hygiene.

6. **Carcinoma of the Esophagus.**—Cumston's article, which was commenced in an earlier number, discusses the subject of esophageal carcinoma of which he recognizes five principal types: 1. The classical simple type without complication, showing itself largely in difficulty in swallowing. 2. The tracheo-bronchial type, producing compression, dyspnea, ulceration, etc. 3. The laryngeal, where it extends to the mucous membrane, muscle and cartilage of the larynx producing similar symptoms. 4. The pulmonary type of disease extending to the lungs and involving the pneumogastric. The cardiovascular form involving the heart and producing dilatation of the aorta and finally perforation of the large vessels. It may also extend to the pericardium, and the heart itself giving rise to various cardiac symptoms, those of pericarditis and endocarditis. He mentions briefly two symptoms of esophageal carcinoma, viz., the laryngotracheal pulsations, first described by Castellino, and unequal pupils, observed by Hitzig. The

clinical value of this latter symptom is small as it may occur in other conditions. The methods of diagnosis are noted—auscultation, catheterism of the esophagus, esophagoscopy, and the use of the Roentgen rays. In conclusion, he describes at length the operation of gastrostomy.

9. **Animal Heat.**—The conclusions derived from Levin's study of the heat economy and of fever are as follows: Heat economy seems to resemble general metabolism inasmuch as it is a result of the joint work of many organs of the body; and fever, the most important pathological state of heat, is in most instances a special kind of intoxication by some substances not as yet well defined. Further work will have to show the precise nature of these substances, and also decide the question whether there is some central apparatus conducting all the complicated works of the heat economy, and what the nature and office of such an apparatus are, if it does exist. He is inclined to believe that later researches seem to show that fever is not always deleterious; it is sometimes beneficial to the economy, though the question is by no means settled, but the truth must certainly lie somewhere between the two extremes. An ordinary febrile temperature does no harm as a rule, often probably does some good. The doctrine, therefore, that every rise of temperature must be fought against and reduced by all means is wrong, since none of the metabolic and other changes accompanying fever is in any way influenced by antipyretics.

11. **Gunshot Wounds.**—The late results of gunshot wounds are elaborated in some thirteen cases of injury from the Mauser bullet examined by Leale, and who finds that they are far less severe from modern projectiles than from those formerly used, and that the change to the use of the small bore rifle has proven to be a great blessing in modern warfare.

12. **Postero-Ocular Hot Water Injections.**—Allen suggests that in case of neuroretinitis involving the retina and choroid, this might be treated by hot-water injections applied to the posterior portion of the eyeball and optic nerve and by adding sodium chlorate to the water sufficient to raise its specific gravity higher than that of the blood, we have all the conditions for osmosis. He has experimented on rabbits to see whether pathologic changes follow the operation and after performing his operation says it caused no serious traumatism, that no change has taken place in the eye or any of the media in these animals.

13. **Copper Sulphate.**—The use of copper sulphate in diseases of the conjunctiva and cornea is condemned by Williams, who concludes as follows: 1. Copper sulphate in ocular affections is maleficent in its effects. 2. Any good effect following the application of the solid copper sulphate in any disease of the eye may be obtained with the use of safer and practically painless means. 3. Trachoma is most successfully treated with weak solutions of silver nitrate, together with frequent irrigation with a weak bichlorid solution in normal salt. 4. No application to an inflamed conjunctiva which produces a lasting pain should be countenanced. 5. Expression is not absolutely essential, yet much hastens the cure of trachoma. 6. A mydriatic should be used in every disease of the eye involving corneal lesions. 7. Copper has ruined more eyes than it has ever benefited.

14. **Hypochondriasis.**—The evil effect of operations performed on account of the delusion of hypochondriasis to aid the mental condition are pointed out by Pick and he gives several instances illustrating his views. In the first part of the past century such operations were recommended and common, and he thinks that these methods are not as yet entirely discarded. His paper is, therefore, a warning against their repetition.

15. **Glaucoma.**—The method of treatment of the unaffected or slightly affected eye in glaucoma is discussed by de Schweinitz, who offers the following conclusions, as suggested by a consideration of the subject: 1. In cases of acute glaucoma the apparently unaffected eye should be operated upon as soon as the anterior chamber is restored in the opposite eye; that is to say, as soon as the wound is closed, provided the history of the case or an examination of the eye furnishes indications already described that it is likely to suffer a glaucomatous attack like its fellow, especially if the patient is so situated that he or she will pass from observation and from the resources of expert examination. 2. In cases of chronic congestive glaucoma the same line of advice applies, and the operation is to be urged if clear information can be obtained that the apparently unaffected eye has suffered attacks of nebulous or iridescent vision, associated with increased intraocular tension. 3. In cases of chronic simple glaucoma, if any periods, however temporary, of increased intraocular tension can be demonstrated according to the methods already suggested, operation should be performed even if central and peripheral vision are perfectly intact. Even when these are normal, careful perimetric examination may reveal a scotoma of the character already described; if so, operation should not be postponed. 4. In cases of absolute glaucoma the same line of advice expressed under Nos. 1 and 2 is applicable.

16. **Color-Blindness.**—William and Archibald Thomson describe the model of a lantern devised by them for the detection of color-blindness, which they think meets certain needs not entirely met by the ordinary tests, especially by the too great reliance on the wool test, the unreliability of which has been pointed out by Edridge-Green and others. They give reports of several cases which show the defects from dependence upon this method alone. They are now of the opinion that with the use of colored lights, a non-professional examiner can do good work, and the use of the lanterns here described reveals color-blindness without doubt, and with prominence and certainty.

17. **Light Treatment.**—The treatment of pulmonary tuberculosis by light is discussed in this second paper by Hopkins, who has used a 50-ampere electric lamp with a 20-inch condensing lens, and has had this arranged with an adjuster so that at a distance of 15 feet the light could be concentrated on a surface an inch in diameter if it should be desired. In using this lamp, a screen made of strips of blue glass is interposed between the patient to cut off some of the heat rays. The chest of the patient is bared and the light concentrated to a circle from fifteen to twenty inches in diameter, according to the tolerance of the patient. The exposures vary from half an hour to an hour daily. The first effect of the light observed is the diminution of cough and the temperature within forty-eight hours. In most cases the temperature is down to nearly normal within the first week of treatment. The effect is judged largely by the gain in weight. In every case the amount of expectoration is perceptibly diminished and the number of bacteria is reduced in the first week of treatment. The effect on the appetite is always marked from the very first. He has treated eleven cases in all and his success warrants its continuance. He cautions in regard to exposure to cold without careful protection for some hours after taking the treatment, for fear of overtaxing the kidneys, and advises also careful examination of the urine in every case where the treatment is being given.

18. **Tuberculosis.**—Heron is a strong advocate of tuberculin in tuberculosis and reports his experience. He thinks it is as safe as any other potent drug. He, however, reports the case of a girl in whom it seemed to act very badly, though only a very small quantity was given. There is a question as to the case being tuberculosis, which he thinks improbable as there was no reaction, and he believes that the death was not due to tuberculin.

19. **Gynecology by the General Practitioner.**—The history of gynecology in this country is first given by Reynolds in an article appearing in the previous number of the *Boston Journal*, in which he calls attention to the fact that gynecology is not exclusively a surgical subject and to the necessity of correct diagnosis. The physician should look after the physical state of the pelvic organs, investigate the diathesis, uric acid, etc., and pay careful attention to the symptomatology. In this number he calls attention to the psychologic side of the evils due to imperfect methods in investigating the cases, false modesty, and to proper instruction in regard to the dangers of gonorrhea and syphilis in men as an element of pre-

ventive medicine. The evils of corsets for young girls are also mentioned and the necessity of repairing lacerations and other injuries incident to parturition before the climacteric period. The importance of looking after cancerous and irritative symptoms, ovarian and renal troubles in women, especially cystitis, and physical examination of the urinary organs which is too often neglected are emphasized.

20. **Movable Kidneys.**—Watson announces that the object of his paper is first to protest against the view that movable kidney is originally a harmless condition, to determine its essential etiologic factors and to record certain postmortem observations that suggest an explanation of certain severe symptoms. The frequent presence of movable kidney in neurasthenia would indicate that it had a connection with that condition. There are other more serious consequences; among these are: 1. Hydro- and pyonephrosis. 2. Abnormal fixation of the kidney. 3. In rare instances gangrene of the organ caused by occlusion of its blood vessels by twisting. As regards hydro- and pyonephrosis he quotes Gigon, Albarran, Tuffier and others, and reports cases of the second difficulty, abnormal fixation of a previously movable kidney. The etiologic factors are discussed at length and the author considers that movable kidney results from a defect in the perirenal structures, fascia, etc., described by Glantenay and Gossett, with the possible influence of the shape and size of the paravertebral fossa in which the kidneys lie beneath the diaphragm. He reports cases in conclusion where the fibrous tissues from the peritoneum had restricted the movements of the kidney, causing a partial twist of the ureter and accounting for the occasional acute attacks of pain.

21. **Visceral Ptosis.**—The special influence of corsets in the etiology of visceral ptosis are treated of in this preliminary communication of Vietor's, and she recapitulates the essential points of the helpful corset for visceral support: A straight front, made of several sections running from below obliquely upward and backward; hip gores; back gores; fit the abdomen first, and from below upward; then fit the chest; leave the waist as it falls into place. The patients should be specially warned that it is not enough to have a straight front, but that there must be room in the back for an oblique pelvis. She lays stress on leaving the middle lacing absolutely alone, merely tying the ends for tidiness.

22. **The Home Sanatorium Treatment of Tuberculosis.**—Bowditch favors the erection of sanatoriums for the treatment and cure of consumption wherever the disease prevails. and doubts if we are yet in a position to judge fairly as to the relative results obtained by sanatoriums in different climates. He thinks, however, at present, perhaps better results can in all probability be obtained from this form of treatment in the Western rather than the Eastern section of the country.

23. **Eosinophiles.**—Williams has studied the eosinophiles in pus and has found them in every specimen examined. He believes that they are not to be regarded as a specific cell, but purely a pathologic one resulting from a natural, alkaline decomposition of the body of a common leucocyte. The eosinophile is a necrotic cell.

26. **Dilatation of the Cervix.**—The different methods of dilatation and their indications are noticed by Garrigues. He mentions painting the cervical portion with cocain, chloral hydrate, antipyrin, etc., the tamponade and manual dilatation by Harris' method of introducing the index finger and massaging with it and that of Bonnaire; either of which are preferable to the old pressure with the cone-shaped hand, which is likely to cause tears, and by hard dilating instruments, which are even more objectionable. Bags filled with fluid are of indisputable value, but are not without their drawbacks; they are apt to provoke too rapid and violent labor pains, favor prolapse of the cord and may push the presenting part away from the brim. Cervical incisions are also mentioned, but are not to be compared with comparatively bloodless dilatation by the hands or instrument.

30. **Otitis Media Mucosa.**—Alderton calls attention to a generally unrecognized ear disease which seems to occur with relatively more frequency in adults and usually following a severe cold, producing first, sometimes earache yielding quickly to the ordinary remedies, but more often tenderness around the auricle, with hardness of hearing, tinnitus, mental embarrassment and distress and sometimes vertiginous attacks. The aurist, who is generally consulted early, finds but little congestion and no swelling in the external ear. The tympanic membrane is seemingly in about its usual position, possible pushed out a little more than normal, the luster is gone, the surface has a dull gray, leaden appearance. Surrounding this dull gray field is a ring of congestion, and coursing across the field are a number of separate capillary twigs. There is no fluid line discernible, nor can the pressure of fluid be made out by any difference in the appearance of the various sections of the drum membrane. Functionally, the ear is apparently very gravely involved. Examination of the nasopharyngeal cavities shows an active or retrogressing inflammatory process. The pulse and temperature are comparatively normal. Such a condition may endure from a week up to years, with apparent remissions. Incision of the drum gives exit to no secretion or only to a little. The drum membrane is often so thick and fibrous that considerable force is necessarily exercised. But on forcible inflation the picture is changed. Then there appears in the canal a quantity of stringy, tenacious mucus which follows the cotton on the applicator on its withdrawal from the canal as a long, filamentous string. Repeated and forcible inflations are often necessary to evacuate the drum cavity. After the removal of this exudate the hearing is decidedly improved and remains so until the incision heals and more mucus is formed. Douching of the external ear seems never to do anything but harm. Periodical inflation with treatment of the nasopharynx will in some cases bring about a slow recovery, but the patient usually is too impatient to wait for this, and permanent impairment occurs from inspissation of exudates or the formation of adhesions. The treatment he advises is incision and evacuation of the tympanum, repeated if necessary, always accompanied by regular Politzerization and conscientious treatment of the nasopharyngeal condition. Before the incision, the external auditory canal should be made as nearly aseptic as possible and the nasopharyngeal cavities thoroughly cleansed. After the membrane has been removed, the canal is packed with gauze and a mild astringent application made to the post-nasal mucous membrane. The patient must be seen in from twelve to twenty-four hours and the ear again gently inflated and the gauze packing removed. After this, a treatment, once in every two or three days, is usually necessary. Should the exudate persist in reforming, a solution of nitrate of silver .5 to 1 gr. to the ounce of boiled distilled water, acts favorably, both injected into the Eustachian tube and instilled in the tympanum through the incision.

32.—This article appeared in The Journal of September 7, p. 611.

33.—Ibid., p. 613.

45. **Alcohol.**—Crothers reports several cases where a single intoxication with alcohol seemed to produce permanent effects in persons previously unused to stimulants. He believes that intoxication to the extent of coma with profound relaxation of all the functional activities of the body is often a serious injury to the brain and nerve centers, and is followed by neuroses and organic change. The significance of alcohol intoxication in the study of obscure diseases can not be overestimated. It may be both an active and exciting cause, and should always be considered in neuro-psychopathies or other disorders that follow. The intoxication of puberty or middle life is often the starting of a circle of diseases usually ascribed to other causes. Intoxication always predisposes to the diseases of inebriety from alcohol or opium which may come on suddenly in after-life. Alcoholic poisoning is far more serious than supposed in its effects and the neuroses which follow.

46.—See abstract in The Journal, xxxvi, p. 1727.

47. **Tuberculosis of the Testicle.**—The following deductions are presented as a result of study of this subject by Abell: 1. The epididymis is the most frequent starting-point of the uro-

genital tuberculosis. 2. It is usually secondary to some other focus, but may be a primary deposition. 3. The testicle is rarely primarily affected, but, as a rule, secondarily so from the epididymis. 4. Primary infection usually occurs by the blood-stream, possibly rarely by coitus. 5. When the epididymis is primarily infected through the blood-supply, the process is probably an intertubular one. 6. When secondary to other foci of the urogenital tract, constituting a descending infection, the process is probably intratubular.

63. **Chorea.**—The etiology and pathology of chorea are discussed by Favill. Its nature has been a subject for wide range of speculation; functional, embolic, toxic, infectious and degenerative causes have all been advocated. The early apparent association of chorea with rheumatism has led to the general belief in the allied nature of the two conditions, some holding that rheumatism in general may be the cause, others in rheumatism with endocarditis as a complication. Favill favors the idea that chorea, arthritis, and endocarditis are related to each other and are related to an infectious cause or causes, though he would not say that these are the only causes. He believes that they are co-ordinate manifestations of disease conditions peculiar to the young in the following order, endocarditis, first; chorea, second; and arthritis last, and that infection is usually an important element of the cause.

65. **Bovine Tuberculosis.**—The question given in the title is discussed by Ingals, who credits Koch's view with a certain amount of validity and his proposition certainly seems reasonable, he says, from evidence, but with him he would withhold conclusions until further research can furnish definite proof. In the meantime many of the profession feel warranted in advising their patients not to worry as much as formerly about milk, though no one wishes the care relaxed that is now being taken to prevent the sale of milk from diseased cows, or to prevent consumption from tuberculous beef. He finishes with the suggestion that condemned criminals might be utilized for experimentation to test this question and has no doubt that many criminals who have forfeited their lives would gladly accept the chance to prolong them even within the walls of the penitentiary.

68.—See abstract in The Journal, xxxv, p. 1005.

69.—Ibid., p. 1172.

71.—Ibid., p. 1104.

73.—Ibid., p. 1172.

82. **Interocular Base Line.**—The interocular base line, so-called by Helmholtz, meaning by this the line joining the centers of motion of the two eyes, is sometimes of some value and Howe describes the method of its measurement. It may be of use in curing certain cases of asthenopia and in prescribing proper glasses and centering the lenses. Two methods are here described, for the details of which the reader is referred to the original paper.

85. **Tuberculosis of the Conjunctiva.**—After reporting a case, Hansell gives the data which he has obtained from a perusal of the literature of the subject. He finds that the cause is often self-infection, wiping the eyes with infected articles, metastasis or traumatism. The palpebral conjunctiva is most frequently infected. The tubercles appear in the form of miliary ulcers, of subconjunctival nodules resembling the granules of acute trachoma, hypertrophied papillæ, and pedunculated tumor resembling papilla fibroma. In addition, Sattler mentions lupus as one of the forms. For diagnosis, the evidence of tuberculosis of other organs and the microscopic examination are largely to be depended on, since tubercle bacilli are not often found. Their presence, however, is confirmatory of tuberculosis. Many cases are undoubtedly masked by trachoma and others diagnosed as trachoma are tuberculous. The methods of treatment that have received the strongest endorsement are excision and the galvanocautery. The inflamed section of the conjunctiva and the healthy zone surrounding it should be excised where the case is not inoperable. If the pre-auricular or other glands are involved, they should be included in the operation. If the case has gone beyond the operable stage, the ulcers should be burned by the galvanocautery.

87. **Entropion and Trichiasis.**—Foster's article is largely a review of the literature and the methods of treatment of this condition. He thinks the real progress in surgery of entropion and trichiasis is perhaps embodied in two modifications, of the Celsus operation, the anchorage of the lower flap of the skin to the upper border of the cartilage to secure permanency, and the implantation of a wedge-shaped graft of mucous membrane to prevent the agglutination of the lips of the wound behind the lashes. The popularity of various modern operations, such as Streatfeild-Snellen, and the Jaesche-Arlt, depend largely on the presence of two or more of the principal features of this operation so modified, the shortening of the lid skin, its anchorage to the cartilage, the partial detachment of the ciliary margin and the reformation of the edge of the lid.

93. **Pernicious Anemia in Infants.**—The first part of Rotch and Ladd's paper is largely a discussion of the literature and theories of this condition and a case is reported in detail. The important points emphasized are the insidious onset, with moderate and paroxysmal attacks of indigestion, extreme pallor and loss of strength, absence of any possible demonstrable cause for a secondary anemia, slightly elevated temperature with absence or glandular or splenic enlargement, the presence of pronounced typical characteristics of the blood of pernicious anemia, absence of any considerable degree of leucocytosis, and rapid improvement in the general symptoms and in the character of the blood with apparent complete recovery, which is typical of the remissions which so often occur. While the child may be perfectly healthy to-day as far as can be determined, the fact remains that permanent recovery has never been reported in any well-attested case of pernicious anemia in infants. Several cases of recovery in adults are on record and it is suggested that the great recuperative power in infants' blood may resist the usually fatal tendencies. As regards the treatment of these cases the management of the feeding is of first importance. Arsenic may be tried cautiously and iron in the form of ferratin or similar preparations will do no harm and may be of benefit. Cabot has recently been treating his cases with laxatives or purgatives on the theory that the disorder is due to absorption of toxins from the intestine, but no definite results have as yet been announced. In these cases the inhalation of oxygen was used in large quantities for long periods and immediate and rapid improvement followed its administration. It is difficult, however, to say anything as to the efficiency of special remedies.

94. **Cyclical Albuminuria.**—After noticing the literature and the theories of the disease, Churchill reports a case in detail with urine and blood examinations, etc. He considers that the symptom is a real danger signal not to be slighted and that its cause should be carefully investigated.

95. **Rectal Polypi.**—The etiology of rectal polypi is discussed by Huber who reports the case of an undersized boy, somewhat backward, with pronounced aprosexia due to adenoids. In addition, goiter and moderately enlarged lymph nodes furnished further evidences of the status lymphaticus. The abnormal rectal condition was doubtless a local manifestation of the same nature. He has noticed one feature common in all cases which have come under his observation during the past four or five years, namely, that rectal polypi were found only in patients who at the same time showed other evidences of lymphoid hypertrophies in the nasopharynx, with other manifestations of the status lymphaticus, and he concludes that this can not be a mere coincidence. The reason why they are not more common is, he thinks, possibly because they are unobserved to some extent.

96. **"Fourth Disease."**—Simpson's paper is based on the experience with an epidemic of a peculiar condition of eruptive fever occurring in the School for the Deaf in Hartford. At least five of the patients had a second rash occurring two or three weeks after the first, lasting several days with slight rise of temperature, but no feeling of malaise. Five of the

patients had had previous scarlet fever and 4 of them are said to have had German measles; there had also been a previous occurrence of an epidemic of "pinkeye," mild in character, which he thinks was rubella manifesting itself in this way. The fact of lamellar desquamation in a large proportion of cases which was certainly not scarlet fever, does more than anything else to make credible the existence of another eruptive disease. The form of desquamation is the chief diagnostic point between "fourth disease" of Dukes and rubella.

104. **Classification of Insanity.**—The conclusions of Dercum's article are: 1. All of the mental disorders which result from the infections, the intoxications, the diatheses, the visceral diseases, the diseases of the nervous system, pregnancy, the puerperium, the lactation,—in short, from all of the diseases and morbid physiological states—belong to the symptom group of delirium-confusion-stupor dementia. Delirium, confusion and stupor are largely interchangeable terms possessing a certain degree of equivalence, and it must depend largely upon the activity of the morbid process as well as upon its character as to which of these forms is present in a given case. That secondary differences of symptoms, dependent upon the nature of the infection or the special poison that has been ingested are present, goes without saying, but these differences in no way affect the truth of the general statement. 2. The melancholia-mania syndrome bears no relation to the various infections, intoxications or visceral diseases. Neither mania or melancholia ever results from them. Mania and melancholia are diseases primarily of the nervous system—neuroses so to speak—and are largely hereditary. He thinks that much confusion has resulted from the unscientific use of mania and melancholia and considers that neither of these or paranoia or the neurasthenia-neuropathic insanities bear any relation to internal diseases, but their onset is favored by any causes that are attended by persistent depression of nutrition or by degenerative changes in the nervous system. 3. The delirium-confusion-stupor syndrome may occur at all ages. Melancholia-mania and paranoia, on the other hand, are related to definite periods of life. 4. The delirium-confusion-stupor syndrome usually occurs independently; its forms may, however, occur as complications or episodes in any of the other affections.

113. **Gonorrhea.**—According to Professor Neisser, gonorrhea is curable in all cases that are properly treated. A definite percentage, however, can not be given and cases of posterior urethritis, and prostatic involvement are much more serious, but even here the prospects of rendering the individual non-infectious, though much diminished, are not yet unfavorable. The indications for treatment are to destroy the cause of the disease, the gonococci, by a treatment that must be capable of deep penetrating action, an effective germicide free from astringent qualities and that will not enter into chemical union with albumin, mucin or chlorin of the tissues. Simple astringents are unsuitable in the acute stage and all mechanical and semi-mechanical methods requiring sounds, endoscope, etc., are dangerous. He considers that protargol has a strong germicidal action, and is least irritative, while argonin, oxycyanate of mercury and largin can be used in the later stages. The Janet irrigations where practicable, and prolonged injections are suitable methods of application. The chronic cases should be treated with bactericidal solutions as long as the gonococci are found and sometimes afterwards. The patient should be permitted to marry when, after thorough, complete and often-repeated examinations, the physician is able to state that the gonococci are not found either by provocative mechanical, or chemical measures. This is from a practical rather than from an academical standpoint. Burnett answers also in the affirmative as to the curability of the disease and thinks fully 100 per cent. are curable. He finds local treatment best in the acute cases, giving internal remedies in case of irritating urine or where it is needed to sterilize, and in chronic urethritis. He thinks, however, it is unsafe to depend solely on the disappearance of the gonococcus, and he would make the limit of time before the patient is fit to marry from six weeks to as many months after complete restoration to the normal as far as possible.

122. **Convulsions in Children.**—A convulsion is a symptom, not a disease, often due to inherited nervous conditions. The child is naturally unstable and the symptom may be a reflex from over-stuffing, intestinal poisoning, and disturbed thermogenesis. Acute auto-infection acting on the former produces the eclamptic seizure. According to Dickey the convulsions not infrequently take the place of the rigor in adult life, ushering in the acute infectious diseases and in the hyperpyrexis of such disorders is diphtheria and pneumonia, where it may also occur. In any case he would first use the thermometer, no matter how urgent the symptoms, and if there is a temperature of 103 or more and the extremities are not cold, he believes a hot bath contra-indicated, but that a cold sponge bath should be employed. The stomach tube, an emetic, anema of warm soap suds, should be used, if indigestion is suspected. Under the cold bath, the temperature is lowered, inspiration becomes longer and deeper, more oxygen is taken into the blood and carbonic acid is liberated, the brain centers and nerves are better nourished and the heart is regulated, and the kidneys secrete more urine, carrying off the poisonous products.

124.—See abstract in The Journal of September 14, p. 721.

125. **Suprapubic Lithotomy.**—Lydston remarks that the simplicity of this operation may tempt its performance on the part of surgeons whose technique is faulty and experience small. The statistics of the operation in the hands of one individual constitutes no criterion of the possible mortality rate in the hands of another. There are special dangers of injuring the peritoneum and of extensive laceration of the bladder, as well as of infection, in any case. He thinks, however, there should be no hesitation in choosing this method when stones of considerable size exist, and that with increasing care in the technique, there will be a decrease not only in the mortality rate, but convalescence will be quicker, there will be fewer cases of infection and the danger of hernia will be reduced to a minimum. An improvement in the results, however, can not occur until operators in general have learned that, in spite of the simplicity of the operation from a mechanical standpoint, there are many details of technique to be improved before the ideal operation can be performed. He says there is a question in his mind whether with improved technique it might not come to be the most useful operation of all for stones, not excepting litholopaxy.

128. **Hedonal.**—After discussing the physiology and therapeutic effects and reporting a case in which this drug has been used, Walling comes to the conclusion that the chief disadvantage of hedonal is its disagreeable taste and that its advantages are: "1. Its acceptability to the stomach, as a rule, notwithstanding the above objection. 2. Its positive effect in a majority of cases. 3. It has no injurious aftereffects. 4. Its use may be continued indefinitely, with good results, or it may be discontinued at any time without the fear of the formation of a habit."

135. **Nose and Throat in Medicine.**—Wright continues his historical article reviewing the periods of Hippocrates down to Roman medicine and Celsus.

136. **Subarachnoid Cocainization.**—The use of subarachnoid cocainization for operations on the head is discussed by Payne, who goes into the details of the method and reports cases. To produce anesthesia of the upper extremities he says it is simply required when the needle is injected that it be pointed upward and the cocainized solution be forced in quickly. He has had no bad consequences in his cases except headache, which is sometimes severe but is readily relieved. In no case has there been surgical shock and he endorses the method as having no contra-indications. He has used this method for two simple mastoid operations, one Stacke operation, one frontal sinus operation, one ossiculectomy and one enucleation of the eye.

143.—See abstract in The Journal of July 13, title 136, p. 142.

FOREIGN.

British Medical Journal, September 14.

Observations on Blackwater Fever. F. K. Kleine.—Koch's views as to the quinin origin of blackwater fever are supported here by Kleine, who, at the request of Dr. Koch, reports fifteen cases that appear to support his views. In each of the histories the hemoglobinuria followed more or less immediately the administration of quinin, and the reported instances where it has occurred without quinin are accounted for by him as largely based on the imperfect details of facts. The quinin works on the blood corpuscles already diseased by the malarial infection; a weakened organism is more powerfully acted upon by poisons than a healthy one and other substances than quinin have been reported as causing hemoglobinuria, such as antifebrin and salipyrin. Blackwater fever does not occur in temperate climates, because there we do not have the extensive and unregulated use of the drug as in the tropics, so that we have no idea how the prolonged administration influences the blood composition. Koch's views are not altered from those formerly held; he believes in the majority of cases blackwater fever is the result of quinin poisoning in malarial patients, but at the same time he holds that by means of an appropriate quinin prophylaxis malaria, and with it, in the vast majority of cases, blackwater fever can be stamped out. An imperfect quinin prophylaxis which does not entirely protect against malaria, on the other hand, predisposes to blackwater fever, for in such a case plasmodia and quinin unite to act harmfully on the organism.

Influence of Color Upon Anopheles. George H. F. Nuttall.—This author has investigated the preferences of the anopheles to different colors. It was noticed at the beginning that they settled on dark cloth, but rarely do this upon white flannel. Therefore, a number of pasteboard boxes were taken, lined with cloth of different colors and placed in rows, the order being changed each day after the observations had been made. For seventeen days during the month they counted the number of flies that had accumulated in the boxes and found that the boxes lined with navy blue, dark red, reddish brown, scarlet and black contained far the largest number, navy blue being evidently the preference and the others following in the order mentioned. The smallest numbers were found in the green, violet, light blue, pearl gray, ochre, and orange boxes, but none whatever in pure yellow. Pale green, light blue, ochre, orange and yellow, especially the last two, seemed to repel the insects. The practical deductions from these facts are that the khaki uniform now in vogue has advantages besides being invisible to the human enemy; its color is absolutely repellent to this malaria-bearing mosquito.

A Further Note on the Biological Test for Blood and Its Importance in Zoological Classification. George H. F. Nuttall.—The same author has experimented on 140 samples of blood derived from all classes of vertebrata to test their antiserum reaction. None, except monkey bloods, gave reactions for human bloods and the blood of the old-world monkeys gave much more powerful reaction than that of the American monkeys, indicating the truth of the Darwinian theory of the closer relationship between man and the old-world apes than with the American monkeys. The antiserum for dog's blood only gave reaction for the blood of the jackal (Canis mesomelas). The antiserum for ox and sheep blood only gave full reaction for homologous bloods, besides the slight reactions previously mentioned in an earlier paper. The ox antiserum produces slight reaction in the blood of the goat and a faint cloudiness in that of the roebuck and Burrhel sheep from the Himalayas. The sheep antiserum furthermore gave a marked reaction with the blood of the Burrhel sheep and of another wild species of sheep, a slight but distinct reaction with the blood of the goat, and a faint clouding with that of the roebuck. He thinks it certain that interesting results from the point of view of the zoological classification will be revealed by these tests thoroughly carried out. From a medicolegal standpoint the tests should be applied to as large a number of bloods as possible. He describes the method, which is simple; just saturate filter paper and dry it, and it makes no difference whether the blood is from a recently dead or living animal.

Inoculation and the Incubation Stage of Plague. W. B. Bannerman.—Calmette is reported to have given his opinion that in a person in the incubation stage of a slight attack of plague we should find the disease rendered grave if at this period a preventive inoculation of the Haffkine vaccine was given, and the case would almost certainly end fatally. Bannerman has investigated this subject statistically, taking the facts that he could collect from different Indian stations and finds that this statement is not borne out. In fact, it is manifest, he says, that there is very little difference between the percentage case-mortality in those attacked respectively before and after the first ten days' period subsequent to inoculation. The figures seem in fact to point to a sudden and very considerable measure of protection being secured after the lapse of twenty-four hours only, though this desirable effect increases with lapse of time.

A Discussion on Stone in the Tropics. P. J. Freyer.—In opening the discussion on stone in the tropics, Freyer accounts for the frequency of stone in India by the geological conditions and drinking water. The regions where stone is most frequent are those were lime salts are in solution in the drinking water and find their way into the system, being deposited in the urinary tract in the form of oxalate of lime; or by causing derangements of the digestive system, lead to the formation of uric acid and urates in excess and eventually to deposits of crystals in the urinary passages, resulting in the formation of stone. The climatic condition also favors this. These special regions are characterized by scantiness of rainfall as compared with the rest of India; great alterations in the temperature, scanty rainfall and intense heat promote excessive perspiration, most of the fluids of the body passing off in perspiration and thus leading to concentration of urine which is likely to facilitate the deposition of crystals. Food and feeding, he thinks, have less influence. He believes the Indian experience shows the great advantage of Bigelow's litholopaxy operation over all other methods.

The Lancet, September 14.

Changes Effected by Antityphoid Inoculation in the Bactericidal Power of the Blood. A. E. Wright.—A summary of the facts brought out in Wright's article is given by him in the following practical conclusions: With regard to the sequence of events after an anti-typhoid inoculation it has been shown: 1. That where the quantum of anti-typhoid vaccine employed produces the familiar, well-marked constitutional symptoms a decrease in the bactericidal power of the blood and a corresponding increased susceptibility to typhoid infection may supervene in the period immediately subsequent to inoculation. Upon this negative phase of increased susceptibility there may, however, be expected to succeed, probably within a period of three weeks or less, a phase of increased bactericidal power and a greater resistance to typhoid. 2. That when the quantum of anti-typhoid vaccine employed produces very severe constitutional symptoms a negative phase of increased susceptibility will be produced which—and the same would appear to hold true also in case of a negative phase supervening upon an actual attack of typhoid—may never be followed up by a positive phase of increased resistance. 3. That when the quantum of anti-typhoid vaccine employed is reduced to the point at which marked constitutional disturbance is avoided a positive phase of increased resistance may be expected to supervene without the intervention of any negative phase, and in many cases within twenty-four hours. The practical conclusions are, therefore: 1. The employment of primary inoculation of large doses of vaccine—enough to give rise to severe constitutional symptoms, seems inadvisable and would probably be associated with danger in the actual presence of a typhoid epidemic. 2. The employment of a moderate dose of vaccine giving rise to marked, if not unduly severe symptoms would also appear to be inadvisable in the actual presence of a typhoid epidemic, but might be appropriately employed where an interval of several weeks is to elapse before exposure to infection and where there are difficulties in the way of carrying out two successive inoculations. 3. The employment of small doses of vaccine producing only a slight constitutional disorder appears to be the only form of typhoid inoculation in the actual presence of an epidemic, and seems also in all other cases the most appropriate method. Such primary inoculation, however, ought always to be followed by a second inoculation, with an increased dose of vaccine. Of subordinate importance are the following: 4. Where the blood of a patient who has recovered from typhoid fever is found to possess a bactericidal power inferior to the average, and where re-exposure to typhoid is contemplated, it would seem advisable to secure for the patient the additional protection associated with possession of a high bactericidal power. This additional security can, if it is permissible to generalize from the observation detailed in one of the cases reported, be conferred by the inoculation of an appropriate quantum of anti-typhoid vaccine. 5. On the other hand, where the blood of the patient who has recovered from typhoid is found to possess a bactericidal power considerably above the average, it wound, taken together with certain other data, appear to be impracticable to increase the bactericidal power by the inoculation of sterilized cultures. 6. Wherever a doubt as to the efficiency of a particular anti-typhoid vaccine arises—and such doubts may obviously arise, either in connection with modifications introduced in the methods of preparing the vaccine or in connection with prolonged storage under unfavorable circumstances—it will always be possible to arrive at a decision of the efficiency of the vaccine by observing the effect exerted by the vaccine in question on the bactericidal power of the blood. He concludes that there appears to be a very definite limit beyond which the bactericidal power of the blood can not, it would seem, be increased by inoculation with sterilized cultures of the typhoid bacillus.

The Postoffice and the Prevention of Tuberculosis. Charles H. Garland.—From an investigation of statistics of an insurance society composed entirely of postoffice officials, numbering nearly 20,000, Garland finds that the amount of deaths from tuberculosis between the ages of 15 and 65 years number 45 per cent. Considering that these are selected lives, he thinks they point to a general contamination of postoffice buildings, and he suggests the use of prophylactic measures; the absolute prohibition of spitting, thorough disinfection, if possible, the disuse of dry sweeping, thorough weekly washings of the floors and a rigid exclusion of tuberculous subjects and tuberculous suspects by more rigid examination. The employés should be taught the causes and modes of prevention of tuberculosis; printed notices should be put up. These recommendations are largely quoted from a French report on the subject, which deals with the same conditions in French postoffices.

Presse Medicale (Paris), September 7.

Indications for Phototherapy. Leredde.—The efficacy of light therapy is due to the remarkable penetrating power of the chemical rays, which act on the lower strata of the integument, without destruction of tissue. There is none of the irregular action which renders the Roentgen rays so treacherous at times. The reaction is not painful, the cicatrices are perfect, and the blisters which form in the course of the treatment of lupus contain an alkaline fluid loaded with eosinophile cells. Leredde is convinced that the Lortet apparatus is a great improvement over Finsen's. It was described and illustrated in The Journal of July 20, p. 229. By the discovery of phototherapy, lupus has become an affection which should be regularly and normally cured. It fails in the advanced, intractable cases, but henceforth, no case of lupus should be allowed to reach this intractable stage. The physician should treat it early, and inspire the patient with the energy to complete the cure. Galvano-cauterization and scarification may be tried first, for a limited time, and then suspended to watch the results. If the lupus continues a progressive course, phototherapy should be applied, without waiting for the former measures as their prolonged use causes cicatricial formations which impede the action of the chemical rays. When the lesions are on the limbs or trunk they are usually very extensive and other measures are preferable. In case of erythematous lupus, if it is the aberrant form, salicylic and pyrogallic acid, mercurial plasters, high frequency electricity and scarifications are able to accomplish the cure. Phototherapy is not indicated except in those cases in which the lupus patch recurs year after year at the same point, in spite of these measures. Fixed erythematous lupus offers the same therapeutic problem as ordinary lupus, and consequently phototherapy is equally effective as in the latter. Electricity may also have a curative influence, but superficial applications are useless. Even after apparent cure, the lesions may recur again and again, and it is necessary to continue the phototherapy until complete sclerosis is obtained. All lesions of the face rebellious to other measures, may be cured by phototherapy. Finsen has cured one patient with extensive vascular nevi and improved nine others. Leredde has been much encouraged by his success in a few cases of this kind. One patient with a nevus occupying one entire side of the face, with a few patches on the other, was treated by phototherapy and the small patches were cured, but the other side was not affected. Another patient has been entirely cured of a number of patches on his chin. Phototherapy, therefore, will cure the less extensive nevi, without much thickening of the tissues, but is powerless—as at present applied—against the most pronounced cases. He has cured three cases of acne rosacea which had resisted all other treatments, applying the phototherapy very gradually and tentatively. He has also found it effective in extensive, almost chronic sycosis. He is now studying its action on buccal leucoplasia and alopecia areata. It is only exceptionally indicated for an epithelioma of the face, but may prove very valuable in rare cases. A patient with an old lupus of the temple and upper lid and eight or ten fresh epitheliomatous foci, was completely cured with two months of phototherapy.

September 11.

Regulating Apparatus for the Composition of the Blood. C. Achard.—When the natural emunctories are insufficient from any cause, the blood evacuates its waste products into the depths of the tissues, into the interstitial lymphatic circulation, the intercellular plasma and, possibly, into the protoplasma of the anatomic elements. These substances poured out into the tissues do not remain there permanently, but gradually find their way back into the blood, and are eliminated by the natural emunctories little by little. The molecular concentration changes less than the chemical composition and returns to normal more rapidly. The cycle of circulation in the blood of ingested chlorids, for instance, may have completed its evolution before the cycle in the extravascular circulation has commenced, and this fact aids in the regulation of the blood. The motive power controlling this regulating mechanism must be derived from the nervous system, and consequently therapeutics should aim to influence the latter rather than the blood itself. The assumption of this regulating mechanism explains the contradictory findings in cryoscopy. The blood is only transiently affected by insufficiency of the emunctories, the waste products are poured out into the depths of the tissues, and excite a reflux of fluids. There is a periodical interchange and when the emunctories function normally again, the solid substances are eliminated en masse. This is seen, for instance, in the excessive amount of chlorids voided after the crisis of an infectious disease.

Progres Medical (Paris), September 7.

Ovarian Treatment. E. Vidal.—The ovary of sheep seems to be the best adapted for organ therapy, as it obviates the danger of tuberculosis which is so frequent in cattle. The ideal would be to take the ovaries from rutting animals, but this is seldom practicable at present. Vidal prefers the subcutaneous route to administration by the mouth, and has found ovarian therapy very effective in the natural or artificial menopause and in neurasthenia in women. The injection of the glycerin extract is made in the buttocks on a line passing from the last sacral vertebra to the upper margin of the great trochanter. He applies an air-bulb to facilitate the injection of the fluid from the fused tube which holds only the exact amount to be injected, from .5 to 5 c.c.

Centralblatt f. Chirurgie (Leipsic), September 7.

Automatic, Weighted Retractors. G. De Francisco.—The Journal mentioned at the time the fine results reported by Tansini from the use of gold wire in suturing after herniotomy. He reduces the number of assistants and prevents all digital contact with the tissues by three new instruments illustrated in this communication. One is a broad, curved retractor which is hung like a hook over the spermatic cord, and by its weight of 146 gm. holds it automatically and permanently out of the way. Another rake-shaped retractor, weighing 250 gm., is applied to the edges of the aponeurosis of the external oblique on each side, and holds them firmly in its curved teeth. A long and narrow spade with a long handle bent in the shape of an L, is used by the assistant to press down the parts below the field of operation. Tansini now reports a series of 120 herniotomies in which the gold wire and these instruments were used, and none showed a trace of suppuration or recurrence. The quantity of wire needed is very small and the expense trifling. As it is left in the tissues it obviates all danger of a relapse.

September 14.

Slitting Thrombosed Varicose Veins. W. Kramer.—Instead of extirpating the thrombosed varicose vein in the leg, Kramer merely slits it throughout its entire length and extracts the clots. In fifty patients thus treated, the lips of the wound in the vein closed spontaneously and healed without reaction. The patients were relieved completely of all their former troubles from this source. The lumen of the veins had become obliterated in the thrombotic process and consequently there was no bleeding nor symptom of embolism.

Deutsche Med. Wochenschrift (Leipsic), September 5.

Auto-Intoxication in Epilepsy. Hebold.—After four years of experimental research on dogs and white mice, Hebold announces that he was never able to establish any regular parallel between the toxicity of the organic juices of epileptics and their seizures. The blood and urine of epileptics during and between the seizures were injected subcutaneously into hundreds of animals, but the results fail to confirm the assumption of a morbid metabolism as the cause of epilepsy. The only positive result attained was that in a few cases the tests showed a condition of auto-intoxication, which was apparently the determining factor for a seizure in these patients.

Disinfection of Surgical Instruments with Tincture of Soap. J. H. Polak.—Delicate sharp instruments are injured by being boiled. They can be disinfected without injury by tincture of soap, which Mikulicz recommends for disinfection of the hands. It is bactericidal and rapidly dissolves pus and blood. Straub has been using it for more than six months in his clinic and has found it very convenient and effective, with no disadvantages. After an operation he puts the sharp instruments in the tincture of soap for fifteen minutes and then cleanses them. Before the next operation he soaks them in tincture of soap for fifteen minutes and then rubs them carefully with a sterile linen rag, dipped in the tincture. This combination of the chemical and mechanical action of the tincture has proved extremely satisfactory. The instruments can be wrapped in cotton impregnated with the tincture.

September 12.

Suture of Heart Through Right Side. I. Watten.—The stab-wound in the heart extended into the right pleura and was accompanied by a large pneumo-hemothorax. The third and fourth ribs on the right side were resected close to the sternum and turned back, the flap extending from the lower margin of the second rib into the fourth interspace. The lung was covered with a gauze compress and pulled up out of the way with a long-handled retractor. The wound in the pericardium was enlarged and two stout silk threads passed through its edges. By pulling on these threads the heart was drawn well into view, showing the wound in it, about 2 cm. long, through which dark blood was trickling. The top of the wound was close to the base. The heart was hurled to and fro in the pericardium during its contraction and all efforts to insert the needle failed, until Watten seized the heart with two fingers from behind and pressed it gently against the sternum. This held it a little more quiet and a stitch was passed through the lips of the wound. The pause seemed to be lengthened as the needle was inserted, and the contractions followed at longer intervals when the heart was drawn up against the pericardium by pulling on the thread. As soon as it was released, it began to pulsate more rapidly again. Two other stitches were taken and the threads tied. The bleeding ceased and the pulsations were considerably longer. The entire posterior and anterior surface of the heart, except the apex, could be palpated with the introduced forefinger. Two strips of gauze were left in the wound in the pericardium, one above and one below; the pleural cavity was loosely packed with gauze, the skin and bone flap replaced and sutured except where the gauze emerged. This portion was also lightly sutured to prevent the coughing out of the gauze. When the drain in the pericardium was renewed, about 100 c.c. of a sero-sanguine effusion was evacuated two days in succession, after which recovery proceeded rapidly, and the patient is now completely restored, able to do the severest physical work. Watten was amazed at the ease with which the heart could be drawn up into the wound and sutured from the right side. He thinks that resection of the sternum is absolutely unnecessary in case of wounds of the heart.

Fungus Colonies in the Stomach. M. Einhorn.—In six cases of hyperchlorhydria or gastralgia with normal or diminished secretion of gastric juice, Einhorn discovered large quantities of a fungus in the stomach. It was evidently colonizing there as the mycelium, spores, etc., were found numerous when the stomach was empty as well as after eating. Lavage of the stomach, followed by spraying with a 1 or 2 per 1000 solution of nitrate of silver, evidently improved the patient's condition, and it seems plausible that the morbid process, if not caused by the fungus, was at least aggravated by it.

Muenchener Med. Wochenschrift, September 3.

Surgical Treatment of Strictures of the Lachrymal Ducts. Passow.—By slitting the duct from inside the nose it is possible to cure existing stenosis and stricture without a scar and with very little danger of recurrence. Passow has had occasion to perform this operation only four times, but the success was striking in each. Tests on the cadaver have shown that the operation is practicable even with a very narrow nasal passage. One assistant must hold the speculum absolutely still, while another wipes the blood. In some cases, removal of the lower portion of the inferior turbinate bone will render the duct permeable and avoid the necessity for further intervention. For this reason it may be well to wait for the results of this intervention before proceeding to slit the duct. Passow prefers the chisel and believes that there is less danger of recurrence of the stricture when the incision is carried into the sac. In two of his cases the operation cured the oozing; the others are too recent for a definite conclusion.

Acid Intoxication in Diabetes Mellitus. O. Busse.—Three cases of fatal diabetes mellitus are described, in which the kidneys, heart and liver presented the same "boiled" appearance noticed after intoxication with dilute mineral acids. Acids are generated in diabetes, especially betaoxybutyric acid, to such an extent that the alkalinity of the organs and of the blood is completely neutralized, and the acids circulate freely and uncombined in the organism. It is therefore probable that coma and death in diabetes may be due to the injurious effects on the organs of this excess of acid entailing a fatal acid intoxication.

Paraffin Injections in Facial Atrophy. A. Luxenberger.—The deformity resulting from progressive facial hemiatrophy in two young women was completely cured by the injection of paraffin according to Gersuny's directions. One case was very extensive, requiring fourteen injections of small amounts of the paraffin in the brow, temple, nose and cheeks, with massage afterward to model the parts symmetrical with the other side.

In the second case the atrophy was restricted to the lower jaw and four injections were sufficient to restore the cheek to its normal outlines. There was a slight smarting after each injection, with the sensation of a foreign body in the cheek, but this all passed away in the course of half a day. The mixture of hard and soft paraffin, called in Germany "white American vaselin," which is used for these injections, does not produce irritation even when comparatively large amounts are used. Straume found that animals tolerated three to ten grams per kilo of the body weight. In Luxenberger's two cases the appetite, pulse, temperature, respiration and urine showed no trace of disturbance during the course of the injections.

Malignant Tumors of the Tonsils. HEINLETH.—Heinleth describes a case of a round-celled sarcoma, 4 cm. long by 2 wide and 2 thick, removed from the throat of a robust man. It was followed by a recurrence in a month, which was likewise extirpated. Twenty-three months have since passed and there are no suggestions of further recurrence. The patient weighs 172 pounds and a linear scar is the only trace of the operation. He removed the tumor by the Kroenlein-Langenbeck method, the incision starting at the corner of the mouth and curving downward over the horizontal ramus of the lower maxilla to the cornu of the hyoid bone and thence upwards to the rear margin of the mastoid process. The maxilla was divided at the second molar. The glands were enucleated, the arteries exposed and the lingual artery ligated. The maxilla was then twisted still farther out of the way and the mouth entered, after placing the patient with his head pendent over the edge of the table. The anterior and posterior pillars to the base of the tongue, the right half of the posterior pharyngeal wall and a portion of the soft palate and of the uvula were removed with the tumor. The defect was partially closed by drawing the mucous membrane of the cheek and of the pharynx nearly together. The open portion was tamponed, the maxilla sutured with silver wire and the skin with catgut. The patient was encouraged to get up the second or third day and the wound rapidly healed. He was able to swallow liquid food almost from the first. The avoidance of tracheotomy and the simplicity of the after-treatment are the chief advantages of this method of intervention. The recurrence was removed by the cautery through the mouth.

September 10.

Floor Infection of Young Children with Tuberculosis. DIEUDONNÉ.—Fifteen children between six months and two and one-half years old, who played on the floor in poverty-stricken homes where one or both of the parents was tuberculous, were examined to see if tubercle bacilli could be discovered on their hands or nasal membrane. Nearly 90 guinea-pigs were inoculated and virulent tubercle bacilli were found on the hands of two of the children and in one in the nose.

Wiener Klin. Wochenschrift, September 5.

Treatment of Hourglass Stomach. K. BUEDINGER.—A patient exhibited the symptoms of hourglass stomach on a cicatricial basis, and was operated on, but no traces of the supposed hourglass shape were discovered. The pylorus was permeable for the finger and soft. A fibrous adhesion connected the pyloric region with the omentum, and a small T-shaped scar was noted on the anterior surface of the stomach, about 6 cm. from the pylorus. As this was being palpated, the stomach suddenly contracted and assumed under the operator's eyes the typical hourglass shape, the pyloric region forming a tumor, closing its lumen completely. The tumor subsided after five seconds and the phenomenon was repeated twice in five minutes. It demonstrated that spastic pylorus tumors are in fact due to the contracture of the antrum or of the antrum plus the pylorus, and that the apparent hypertrophy is merely the rigidity of the contracture. In this and similar cases, when the hand was placed over the lesser curvature and the greater was pressed with the other hand, it was possible to perceive a trickling of fluids from one into the other as through a very narrow aperture. In cases not adapted for gastroenterostomy, favorable results may be attained by incising the stomach at the edge of the greater curvature, carrying the incision equally high on both the front and rear surfaces of the organ. The edges of the incision are then sutured together which restores the stomach to nearly normal shape. This operation was performed on one practically moribund patient with excessive hematemesis, but she succumbed soon afterward. The operation, however, established the feasibility of this technique.

September 12.

The "Ether Drunk" in Its Practical Application. F. TEWELES.—Relaxation and analgesia follow ten or fifteen deep inhalations through the ether mask on which from 10 to 30 c.c. of a mixture of balsamic oil and ether have been poured. The operation can thus be commenced within a minute of the first administration of the ether. In about a third of the 157 cases operated on by this technique at the Vienna Rudolfinerhaus, the patient made some slight repelling movement and then quieted at once. In but very rare cases was it necessary to administer another 10 c.c. One patient who was making vigorous defensive movements with her arms, held the leg on which the operation was being performed, perfectly still. The flask first used holds 30 c.c., the others 10 c.c. each, and it is seldom necessary to use more than one or two of the latter, even in very protracted operations. It is possible to keep patients thus "drunk" for an hour with as little as 110 c.c. of the ether. The operator aims to keep the patient on the narrow borderland between awaking and the manifestation of the stage of excitement. The appearance of the patient is that of a man "dead drunk." This "ether rausch" has nothing in common with ether narcosis except the substance employed. The preparation of the patient consists merely in fastening his attention exclusively on the narcosis. This method of anesthesia is practicable in two-thirds of all operations. If it fails, for any reason, it can be supplemented by ether or chloroform, transforming it into an actual narcosis, and even in this case, it has advantages over the latter alone. As such minute amounts of ether are used, it is absolutely harmless. The disadvantages are that many patients scream and make a disturbance, although they do not experience the slightest pain. Sometimes they make a defensive movement at the first touch of the instrument. Certain nervous patients are too excited to concentrate their attention on the narcosis and this method is liable to fail in their case and also in case of hard drinkers. But these disadvantages are too slight to prevent the general adoption of the "ether rausch," which will certainly follow the recognition of its harmlessness and effectiveness, and a better knowledge of the cases to be excluded.

Gazzetta degli Ospedali (Milan), September 8.

Interrupted Centrifugalization for Sedimentation of Urine. E. U. FITTIPALDI.—A simple method of freeing urine from muco-pus cells, which sometimes completely obscure the microscopic field, is to rotate the centrifugal apparatus fifty times and then pour off the supernatant fluid. Physiologic salt solution is added in its place and the centrifugalizer rotated again for about twenty times, and then again for ten, substituting the salt solution each time. By this interrupted centrifugalization all the muco-pus cells are poured off in the supernatant fluid, leaving all the elements needed for the diagnosis of nephritis, etc.

Serodiagnosis in Tuberculosis. F. DE GRAZIA.—The serum of many animals entirely free from tuberculosis proved capable of agglutinating homogeneous cultures of the tubercle bacillus in the research described by De Grazia. He found also that agglutination was produced not only by the serum of tuberculous patients but also by that from normal persons and from patients with various diseases. Serum from tuberculous subjects has also marked agglutinating power on cultures of other bacteria, the staphylococcus, typhoid, diphtheria and other bacilli. The agglutinating reaction is intense in progressing, advanced tuberculosis, and is perceptible even in the incipient stages, although there is no strict parallel between the degree of agglutination and the stage of the disease. It occurs with killed cultures, but very much more slowly. The agglutinating reaction, therefore, has little, if any, specific diagnostic significance.

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

Holden's Anatomy. A Manual of the Dissection of the Human Body. Edited by John Langton, Surgeon to, and Lecturer on Anatomy at, St. Bartholomew's Hospital. Seventh Edition. Revised by A. Hewson, M.D., Demonstrator of Anatomy, Jefferson Medical College, Philadelphia. In Two Volumes. Vol. 1. Scalp, Face, Orbit, Neck, Thorax, Upper Extremity. 153 *Illustrations*. Vol. II. Abdomen, Lower Extremity, Brain, Eye, Organ of Hearing, Mammary Gland, Scrotum and Testis. Illustrations. Cloth. Pp. 843. Price, $1.50 per volume. Philadelphia: P. Blakiston's Son & Co. 1901.

Surgical Technic. A Text-book on Operative Surgery. By Fr. von Esmarch, M.D., Professor of Surgery at the University of Kiel, and E. Kowalzig, M.D., Late First Assistant at the Surgical Clinic of the University of Kiel. Translated by Professor Ludwig H Grau, Ph.D., Formerly of Leland Stanford University. and William N. Sullivan, M.D., Formerly Surgeon of U. S. S. *Corwin*. Edited *by Nicholas Senn*, M.D., *Professor of Surgery at Rush Medical* College. With 1497 Illustrations and 15 Colored Plates. Cloth. Pp. 866. Price, $7.00. New York: The MacMillan Co. 1901.

Manual of the Diseases of the Eye, for Students and General Practitioners. With 275 Original Illustrations, Including 36 Colored Figures. By Charles H. May, M.D., Chief of Clinic and Instructor in Ophthalmology, Eye Department, College of Physicians and Surgeons, N. Y. Second Edition, Revised. Cloth. Pp. 408. Price, $2.00. New York: Wm. Wood & Co. 1901.

Diseases of the Stomach and Their Surgical Treatment. By A. W. Mayo Robson, F.R.C.S., Member of Council and Hunterian Professor Royal College of Surgeons of England, and B. G. A. Moynihan, M.S. Lond., F.R.C.S., Assistant Surgeon Leeds General Infirmary. Cloth. Pp. 308. Price, $3.50. New York: William Wood & Co. 1901.

A Manual of Determinative Bacteriology. By Frederick D. Chester, *Bacteriologist of the Delaware College Agricultural Experiment Station*. Cloth. Pp. 401. Price, $2.60. New York: The MacMillan Co. 1901.

What a Young Wife Ought to Know. Thousand-Dollar Prize Book. By Mrs. Emma F. Angell Drake, M.D., Graduate of Boston University Medical College. Cloth. Pp. 288. Price, $1.00. Philadelphia: The Vir Publishing Co.

Claude Hartland. The Story of a Life: For the Consideration of the Medical Fraternity. Cloth. Pp. 141. Price, $1.00. St. Louis, Mo.: Lewis S. Matthews & Co.

Physicians' Clinical Chart and Fee Book. By Walter Key, M.D., Pilger, Neb., Member of American Medical Association. Volume I. Leather. Price, $1.00.

Queries and Minor Notes.

MEDICAL LAWS.

Clutier, Iowa, Sept. 18, 1901.

To the Editor:—Will you please inform me of the requirements to practice medicine in Colorado? Is a diploma sufficient or is an examination also required? M. B.

Ans.—A diploma or other satisfactory evidence of graduation from a regularly chartered medical school recognized by the Board, or an examination, is required.

Rib Lake, Wis., Sept. 20, 1901.

To the Editor:—Would you please quote me the medical law of Montana? O. E. W.

Ans.—Montana requires a satisfactory diploma and passing of examination. Write to Secretary of Board of Examiners, Dr. Wm. C. Riddell, Helena.

Brenham, Texas, Sept. 23, 1901.

To the Editor:—Will you please give in the next issue of The Journal the law governing the practice of medicine in the State of Louisiana, and the name of the president and secretary of Examining Board? J. B. Y.

Ans.—Louisiana requires a diploma from a medical college in good standing as determined by the State Board, and a satisfactory examination. The secretary of the Board is Dr. F. A. Larue, 624 Gravier St., New Orleans.

SCHLEICH'S LOCAL ANESTHESIA.

Macon, Ga., Sept. 16, 1901.

To the Editor:—Will you please state in the next issue of The Journal the nature of Schleich's local anesthesia?

Ans.—Schleich's method consists in the local injection, into the corium and around the field of operation, of a weak solution of cocain, morphin and chlorid of sodium, producing an edema of the skin. Several solutions of different strength of cocain and morphin are used. The following is Schleich's second solution and most commonly employed, according to the International Text-Book of Surgery: Cocain muriat., .10; morph. muriat., .025; sodii chlorid., .20; aq. destil., ad 100. Sterilize and add gtt. ii of 5 per cent. carbolic acid. The stronger solution No. 1 has twice as much cocain, and No. 3 has only .01 cocain and .005 morphin, the sodium chlorid remaining the same in all three. If other structures than the skin are to be anesthetized the injections are made correspondingly deeper. Eucain has been extensively substituted for cocain, it is claimed, to much advantage.

The Public Service.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service for the seven days ended Sept. 19, 1901:

P. A. Surgeon J. O. Cobb, granted five days' extension of leave of absence from Sept. 13, 1901.

P. A. Surgeon Rupert Blue, granted five days' extension of leave of absence.

P. A. Surgeon J. A. Nydegger, relieved from duty at Cape Charles Quarantine and directed to proceed to Cairo, Ill., and assume temporary command of Service during absence of P. A. Surgeon J. H. Oakley, on leave. Granted two days' leave of absence from Sept. 10, 1901.

Asst.-Surgeon J. F. Anderson, directed to report to Medical Officer in Command, Immigration Service, New York City, for duty.

Asst.-Surgeon C. W. Wille, directed to assume command of service at Cape Charles Quarantine, relieving P. A. Surgeon J. A. Nydegger.

A. A. Surgeon G. N. Barnesby, granted leave of absence for one month from Sept. 1, 1901.

A. A. Surgeon R. E. Ebersole, granted three days' extension of leave of absence from Sept. 9, 1901.

A. A. Surgeon J. W. Stevenson, granted leave of absence for sixteen days from Sept. 9, 1901.

A. A. Surgeon W. S. Walkley, granted three days' leave of absence from Sept. 12, 1901.

A. A. Surgeon Juan R. Xiques, granted leave of absence for thirty days from Sept. 1, 1901.

Sanitary Inspector J. Y. Porter, directed to visit Key West, Miami, Jacksonville, Fernandina and Mayport, as appraiser.

Hospital Steward L. W. Ryder, directed to report to Director of Hygienic Laboratory for temporary duty.

Surgeon Eugene Wasdin, relieved temporarily from command of the service at Buffalo, N. Y., and assigned to special duty with the President—Sept. 13, 1901. Detailed to represent the service at meeting of American Public Health Association, September 16-20.

Surgeon W. J. Pettus, granted leave of absence for two months from September 15.

Surgeon R. M. Woodward, detailed to represent the service at the meeting of the American Public Health Association, September 16-20.

P. A. Surgeon M. J. Rosenau, detailed to represent service at meeting of the American Public Health Association, September 16-20. Granted leave of absence for one day, September 14.

Asst.-Surgeon Dunlop Moore, relieved from duty at Nome, Alaska, and directed to proceed to the States and await orders.

A. A. Surgeon G. H. Altree, granted leave of absence for fourteen days from September 9.

A. A. Surgeon J. G. Stanton, granted leave of absence for eighteen days from September 13.

A. A. Surgeon W. O. Wetmore, directed to assume temporary command of service at Buffalo, N. Y., during absence of Surgeon Eugene Wasdin on special detail.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended Sept. 21, 1901:

SMALLPOX—UNITED STATES.

Illinois: Freeport, Sept. 7-14, 1 case; Peoria, Aug. 1-31, 24 cases.
Maine: Portland, Sept. 7-14, 1 case.
Massachusetts: Boston, Sept. 7-14, 2 cases.
Nebraska: Omaha, Sept. 7-14, 1 case.
New Jersey: Newark, Sept. 7-14, 4 cases, 1 death.
New York: New York, Sept. 7-14, 3 deaths.
Pennsylvania: Sept. 7-14, Erie, 1 case; Philadelphia, 25 cases. 4 deaths.
Utah: Salt Lake City, Sept. 7-14, 4 cases.
Washington: Tacoma, Sept. 1-8, 1 case.
Wisconsin: Green Bay, Sept. 8-15, 1 case.

SMALLPOX—FOREIGN.

Austria: Prague, Aug. 24-31, 1 case.
Belgium: Antwerp, Aug. 24-31, 3 cases, 2 deaths.
Colombia: Panama, Sept. 2-9, 12 cases.
France: Paris, Aug. 24-31, 3 deaths.
Great Britain: London, Aug. 24-31, 74 cases, 7 deaths.
India: Bombay, Aug. 13-20, 1 death; Calcutta, Aug. 10-17, 1 death; Madras, Aug. 10-16, 9 deaths.
Italy: Messina, Aug. 24-31, 3 cases.
Mexico: City of Mexico, Aug. 25-Sept. 1, 1 case.
Russia: Moscow, Aug. 17-24, 2 cases, 1 death; Warsaw, Aug. 17-24, 2 deaths.
Uruguay: Montevideo, July 18-25, 10 cases.

YELLOW FEVER.

Cuba: Matanzas, Aug. 25-31, 2 cases.
Haiti: Port ou Prince, Aug. 19-26, 1 case, 1 death.

CHOLERA.

India: Bombay, Aug. 13-20, 11 deaths; Calcutta, Aug. 10-17, 7 deaths; Madras, Aug. 10-16, 76 deaths.
Japan: Yokohama, Aug. 3-17, 3 cases, 1 death.

PLAGUE.

India: Bombay, Aug. 13-20, 201 deaths; Calcutta, Aug. 10-17, 20 deaths.

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Original Articles.

SOME UNUSUAL FEATURES OF APPENDICITIS AND THEIR TREATMENT.*

ERNEST LAPLACE, M.D.
PHILADELPHIA.

The protean character of various forms of pathological conditions, grouped under the head of appendicitis, offers the surgeon an unusual and often unforeseen group of clinical, as well as pathological, manifestations. The varying size and anatomic appearance of the appendix, the various movements through which it passes in peristaltic action, the various directions in which it might permanently locate itself, from the adhesions it is likely to make during the course of a surrounding inflammation, make the possible resulting pathological lesions almost numberless. Should a case be submitted to operation a very short time after the initial symptoms present themselves, the purpose of this paper would be eliminated, for nothing would be found but a displaced appendix adherent to the colon, ileum or retroperitoneum. Possibly when an anomaly takes place, an adhesion to surrounding organs might be found, and the operation or cure of the condition would consist simply in a careful dissection of the adherent and inflamed appendix. Not until the profession and the laity are convinced of this fact will there disappear from clinical surgery the complicated and distressing cases, which, unfortunately, form the subject of these lines. As on a former occasion, I repeat the following proposition: "In every case of fatal appendicitis, there was a time when, had the operation been performed, the patient would have survived." This is true no matter what complications or unusual phases the peculiar anatomic conditions of the case would likely produce in the eventual course of the disease. Granting, as we know, that the first symptoms of appendicitis are persistent pain, even after evacuation of the bowel, and that, therefore, at that stage, nothing more than a mere adhesive peritonitis or perityphlitis ought to be as yet the pathological lesion. Neither the profession at large nor the laity have yet realized the truth of this proposition, and it follows and possibly will continue to follow, that various anomalies in a case will result from certain unusual complications, some few of which I desire to draw your attention to at present.

CASE 1.—A young man, aged 26, complained of constant pain in the left iliac region, the character of which seemed almost like that in acute intestinal obstruction. A differentiation was made by the attending surgeon, who promptly obtained an evacuation by the administration of salines. After slight relief of the condition, the pain returned with redoubled intensity. Rigidity, however, existed in the right iliac region, the pain being distinctly in the left. This made the diagnosis uncertain, and hence a medical treatment was persisted in, with only an increase of the pain, elevation of temperature and increase of pulse. Three days after the appearance of the pain the patient was taken to the Medico-Chirurgical Hospital, and was immediately submitted to operation. A mass was found adherent to the anterior parietal peritoneum, and, with difficulty, separated. Evidences of radiating peritonitis existed, and, as yet, no pus had formed, although the end of the appendix presented a gangrenous appearance while fastened to the peritoneum. The appendix was dissected away, cut at its base flush with the colon, and the edges inverted, treating the opening as a gunshot wound of the abdomen. The surrounding adhesions were scraped and disinfected with a gauze sponge, dipped in a 1 to 1000 bichlorid of mercury solution, and the surrounding parts carefully packed with iodoform gauze. The patient made an uninterrupted recovery.

The lesson learned in this particular case was the reflex character of the pain, which the patient insisted he felt on the left side, tending to deceive the surgeon. The persistent induration of the abdominal walls on the right side, showing a local reflex contraction, together with a return of the pain after copious evacuation, eliminated any direct intestinal obstruction, and pointed out the existence of a local intraperitoneal irritation directly under the indurated muscle. In this connection we should remember that the law of reflexes is varying and deceptive, whereas, the law by which a muscle that is irritated, contracts and becomes indurated, is positive, constant and unchanging. Hence, rather than be led to the operative procedure by the uncertain character of the pain, it is wiser to base our opinion upon the positive evidence of the induration of the muscle in a certain locality, though the pain be felt at a distance.

CASE 2.—A man, aged 42, was taken to the Medico-Chirurgical Hospital, suffering with what his attending physician supposed was an abdominal tumor on the right side, encroaching upon the right inguinal region. There had been no acute manifestations, though the patient had long complained of obscure pains in that region. The temperature ranged between 99 and 100, while the pulse was about 90, the patient being somewhat emaciated. Physical examination revealed an indurated mass, immovable and not circumscribed. There was a tendency to diarrhea in the case. The blood count was taken, 20,000 white blood corpuscles were found to a cubic millimeter, thereby not giving us much information so far as the relation of leucocytosis to the formation of pus was concerned. The peritoneum was opened by a line of incision, extending from the costal cartilage to the crest of the ilium. No adhesions were found and a hard mass, simulating a retroperitoneal sarcoma, was felt. Prolonging the incision to the iliac region, the appendix was found sloughed off at the end and penetrating this large mass. It seemed then that the diagnosis of a retroperitoneal sarcoma was correct. Knowing the uselessness of attempting to remove such a tumor on the one hand, and the advisability of establishing a positive diagnosis on the other, it was determined to explore the nature of the tumor. An incision revealed a wall, thickened to the extent of three-quarters of an inch, leading to a large abscess cavity. The introduction of the finger within the cavity led to a point where the appendix was adherent to the abscess, having caused a retroperitoneal abscess, which grew to an enormous size, developing thickened walls, and subsequently simulating a retroperitoneal sarcoma. The pus was examined and was found to be free from living organisms, though still containing streptococci and staphylococci that had not undergone disintegration. This would explain the comparative freedom from inflammatory symptoms in the patient. The abscess was thoroughly drained, scraped, washed and packed with iodoform gauze. From this case we should be reminded of the uncertainties of a positive diagnosis in abdominal tumors, and should, whenever practicable, give the patient the benefit of a positive opinion, which can only be gotten, without disadvantage, by exploratory incision under modern aseptic precautions.

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* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section: Drs. W. J. Mayo, H. O. Walker, and A. J. Ochsner.

Case 3.—A young man, Italian laborer, aged 25, had been convalescent from typhoid fever, and suffered obscure pains in the right hypochondriac region, slight jaundice, but no elevation of temperature. He had often heard of appendicitis, and was convinced, though he spoke very little English, that he was suffering with this condition, explaining that he was assured of this fact. His symptoms were decidedly limited to the region of the gall-bladder. There was slight induration in the right iliac region and constipation. Owing to the persistent jaundice and the pain, a diagnosis of possible gallstones was made, and an exploratory incision was resorted to, over the gall-bladder. This was found somewhat enlarged and containing pus, a cholecystostomy having been performed. While we had made a diagnosis of cholecystitis, and had said nothing about removing the appendix, the patient made us promise that we would explore the region of his appendix. To this we consented. We accordingly made an exploratory incision in this region, and to my great surprise the real seat of his disease was found. The appendix was gangrenous and pus had formed about it. Considerable peritonitis existed, which, if not checked, would have ended fatally. The parts were carefully cleansed, the appendix resected, and both cholecystitis and appendicitis were removed at the same operation. It has often been suggested of late that there may be an intimate connection between the etiology of some forms of these conditions. This case presented a history of typhoid fever, as well as grippe, leaving the system in a reduced condition, unresistant to the invasion of certain organisms and predisposed to the development of metastatic abscesses. There is no wonder that two organs so similarly constructed, histologically, as the gall-bladder and the appendix, should become a prey to the development of organisms from similar causes. Both are connected directly with the intestinal tract, by continuity, only the gall-bladder connecting with the gut from a greater distance and at a point where ferments and organisms have not yet attained great virulence, while the appendix connecting with the gut at a point where practically the intestinal contents have fully served their nutrient purposes, and have become foul refuse matter ready to enter into the colon as a reservoir. This would explain, in a measure, the greater frequency of the infection of the appendix from the gut than the gall-bladder, but if we presuppose a very much depressed condition of the system where phagocytes are weak and insufficient in number, it does not matter so much whether the organ invaded be the gall-bladder or the appendix, whether the organism of infection be from the duodenum or the ileo-cecal region, both gall-bladder and appendix are weak and receptive, the whole system being also depressed, germs may be of uniform virulence the whole length of the intestinal tract, and would tend, therefore, to produce an inflammation of the same character in the gall-bladder at the origin and in the appendix at the end of the small intestine.

Case 4.—A man, Italian, aged 40, was admitted to the Medico-Chirurgical Hospital, suffering with symptoms of chronic intestinal obstruction. There had been gradually more and more difficulty in obtaining evacuations in spite of purgation. A distinct tumor was felt, movable, within an area of 3 inches radius around the umbilicus. There was no fever and pulse was rapid, though strong. The gastro-intestinal irritation and symptoms of dyspepsia suggested the possibility of a floating kidney, though it was impossible to return the tumor to the region of the kidney. An exploratory incision was determined upon, and I must acknowledge that I scarcely had any other condition in mind, as a possible explanation of the symptoms, than carcinoma of omentum or intestine, or floating kidney. On opening the abdominal cavity a large kidney-shaped tumor was found, directly under the umbilicus, consisting of omentum, ileum, colon and mesentery. This mass had formed no adhesions with the peritoneum, but was freely movable, as had been discovered on clinical examination. As the tumor was unraveled and dissected out, a foul abscess was opened, the omentum was resected, the ileum separated from the colon, and an appendix about the size of a thumb was found, having become gangrenous from a perforating fecal concretion. There had been a loosening of the caput coli from the ileo-cecal region, an adhesion to the omentum, which probably drew the parts up to the umbilicus, and a chronic appendicitis had developed away from the normal location of the organ. The appendix was resected, the gut scraped thoroughly with a curette, washed with a bichlorid solution of 1 to 1000 and a gauze sponge introduced so as not to allow the rest of the abnormal cavity to become irritated. The ileo-cecal portion of the intestine was pulled back to its normal position and fastened there to the abdominal wall, while the seat of the inflammation was thoroughly packed with iodoform gauze. Here again, owing to the limitation of the infection, granulations immediately set in and the patient recovered without any further complication. This was another instance of the difficulty of making a positive diagnosis. As I can now retrace the course of the affection, I would venture to say that the adhesion of the omentum to the cecum took place first as a result of the inflammation, there being no other adhesions, the violent contraction and thickening of the omentum gradually lifted up the ileum and cecum to its new position near the umbilicus. In this instance, owing to a lack of adhesions between the inflamed parts and the parietal peritoneum, there was no induration of the abdominal wall, which would lead us to locate an inflammatory condition immediately under it, showing a marked contrast from Case 1, where the inflamed parts were found directly under the indurated portion of the abdominal wall.

It is generally agreed that appendicitis, as such, does not kill, but the peritonitis, incident to the appendicitis, is what proves fatal. The dreaded complication of this widespread affection, therefore, is peritonitis, and he who successfully meets the complicating peritonitis would prove most successful in the treatment of this condition. It behooves us, therefore, to thoroughly understand what we are attempting to achieve before saying that we have succeeded or we have failed in arresting the peritonitis, incident to appendicitis. Therefore, in every case of appendicitis, three different periods should be established:

1. The period of appendicitis, properly so-called; by that I mean such pathological conditions and symptoms resulting therefrom, as are limited to disease, as yet existing in the appendix proper.

2. The stage of peritonitis, resulting therefrom, is limited to a primarily acute or primarily chronic inflammation of the peritoneum, starting from the region of the appendix and spreading thereafter.

3. The stage of septicemia, which means a septic condition of the blood, resulting from poison developing therein, which poison was absorbed from an infectious appendiceal peritonitis.

These three propositions being clearly established, we will say, that for the first, that is, when the inflammation is strictly limited to the appendix proper, the curative measures are medical, when at first successful; operative, when the first medical attempts at relief have failed.

The second condition is the one generally found in its mildest expression, when small adhesions are found about the appendix, and in its most marked expression when an acute abscess, circumscribed or very lately perforated, exists. In this class of cases, while there is a peritonitis, chronic or acute, according to the particular conditions present, the peritonitis is a peritonitis, no more or less, that is, an inflammation of the peritoneum, a condition corresponding to a circumscribed abscess when the condition is chronic, or else if the abscess has broken and has started a general peritonitis, a condition corresponding to a recent perforating gunshot wound of the intestine or a recent perforating ulcer of the stomach or a recent perforating Peyer's patch in typhoid fever. Just as these varying conditions warrant an early operative course to be of a successful issue, so also in these forms of peritonitis from a chronic appendiceal abscess that has perforated or an acute peritonitis set up by the appendicitis, we may hope for success by applying the same principles of rapid operative procedure before the infection becomes generalized and rises from a mere peritonitis to one of septicemia. Upon the treatment of this stage of the condition little need be said. Carefully cleansing the operative field, flushing the abdominal cavity, or if the abscess has partaken of a chronic character, carefully packing with iodoform gauze, so as to isolate the rest of the abdominal cavity, meet the indication and give success.

Not so, however, when we consider the third and most important division of our subject. When the spread of the peritonitis has been such as to have started a septicemia, and both peritonitis and septicemia have joined hands to destroy the patient, what is best to be done? Usually, we simply wash out the abdominal cavity, close to the abdomen, drain with gauze and tube from the most dependent portion and let the infectious elements of the abdomen still develop, furnishing more food for the septicemia that has already started. Shall we continue for a period our attempts at utter destruction of the local peritonitis or local peritoneal infection, preventing further toxins from being absorbed into the general economy, and hoping thereby that the septicemia already set up will be taken care of and destroyed by the still powerful phagocytes? It strikes me that the indication is clear that we must take it for granted that the phagocytes will compete more successfully with a slight amount of septicemia, the sources of which will be shut off, than with a septicemia which is continually increasing by constantly forming toxins taken up from the peritonitis. It would be vain to hope that any form of local peritoneal treatment should destroy the septicemia existing to an utmost degree in the general economy, but it is not vain to hope that local treatment may stop a peritonitis, which, though it be accompanied by the beginning of a septicemia, would ultimately produce a septicemia beyond the control of phagocytic action. Therefore, in the treatment of peritonitis, the two elements to consider are the peritonitis as such and the accompanying amount of septicemia that it has already caused.

This local treatment of peritonitis, whereby the arrest of a progressive septicemia may be hoped for, should consist, I believe, in a constant and persistent flushing of the peritoneal cavity, for at least a few hours after the operation. This should be done, as I described nearly two years ago, by continuous irrigation of the peritoneal cavity with a normal saline solution. It should be applied during the operation at the temperature of 100 Fahrenheit, and maintained after the operation by a system of irrigation, as follows: A glass tube is introduced to the bottom of the pelvis, which is connected with a rubber tube, leading to a basin under the bed. A small tube is introduced at the superior extremity of the wound and is placed in connection with the irrigating apparatus, which latter should be only a few inches higher than the patient. The wound is closed tightly between the two tubes. A continuous irrigation will follow and should be kept up according to the necessities of the case. The immediate effects will be stimulation of the heart action, a general irritation of the peritoneum, promoting phagocytosis, a restraining effect upon the development of local organisms, and a dissolving of the toxins, and draining them away from the abdominal cavity. This, I say, is the direct application of the peritoneum to the principle we have found in general surgery so effective. The indications are the same, just as in general surgery, these local irrigations, though indicated, can not cure the septicemia that has already resulted from an infected limb; so also in a peritonitis, this irrigation can not cure the marked septicemia that has already started, but, just as in an infected limb, this continuous irrigation will restrain the development of organisms, which might otherwise result in a general septicemia; so also the general peritonitis, the continuous irrigation will restrain the development of micro-organisms, which otherwise would intensify the septicemia, rendering it beyond the control of the body. While this method is strictly based on surgical principles, it must not be expected to exert directly more than a local action upon the peritoneum, destroying the source of infection therefrom. Latterly, saline venous transfusions have been strongly advocated in the treatment of general septicemia. Inasmuch as absorption is very free from the peritoneal cavity, we would be warranted to expect even some general benefit from the continuous peritoneal irrigation. However, the important point to remember is not to discredit the beneficial action of irrigations, on account of its failure to destroy septicemia when it has already invaded the general economy. It would be uninteresting to relate the several cases that I have successfully treated by this method. We are justified, I believe, in concluding that, owing to the general acute nature of the peritonitis, the cases would have progressed otherwise to a fatal termination. In one instance the irrigations were kept up for three days; this, however, is not absolutely necessary, as the formation of fibrin from the irritation of the salt solution may impede the dissemination of the irrigating fluid before this time. At all events, the irrigation should be kept up as long as the fluid freely drains from the abdominal cavity. The essential precaution to be taken is that the flow of fluid be free and continuous, otherwise a hydrostatic pressure is produced within the abdominal cavity, tending to impair, mechanically, the function of the diaphragm in respiration. The hopelessness of many of these cases surely warrants a faithful trial of the above method.

THE KNOT WITHIN THE LUMEN IN INTESTINAL SURGERY;

WITH REPORT OF NINETEEN CASES.*

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CHICAGO.

The history of the location of the knot in intestinal surgery might be said to be the history of that branch of surgery itself, for, it would appear, that everything has hinged on the knot and its location. When this was outside of the abdominal wall intestinal surgery was in its infancy. The methods were crude, and the mortality high. As the knot began to make its way inward this branch of surgery advanced as a science. Crudity was replaced by a more perfect technic, and, as a result, the mortality rate was greatly reduced. Literally, the involution of the knot might be looked upon as the evolution of enterorrhaphy.

A brief glance at the various steps may not be out of order. It confirms the above and shows that the trend of surgical thought from the earliest times to the present has been a search for the best location for the knot.

In this quest there was a gradual progression from without inward. This may be divided into five stages, as follows:

1. outside of abdominal wall, artificial anus; 2, outside of the intestinal wall, anchored to the abdominal wall; 3, outside of the intestinal wall, in the free peritoneal cavity; 4, outside the intestinal wall, buried between the opposed serous surfaces, and 5, inside of the intestinal wall, on the mucosa.

Attempts to place the knot within the lumen have been made by Vesein, Bishop, Maunsell, Ullman, Cheatle and Hartigan. Breidenbach's suture has been described as "tying the knot on the inside of the lumen of the bowel." Correctly speaking, the knot is not in the lumen, but between the two inverted and coapted margins. It, therefore, cannot be properly included in this list. Czerny and Wölfler merely add a mucous stitch to the ordinary Lembert.

Maunsell was the first to introduce a suture in such a manner that the knots of all the stitches employed in the enterorrhaphy proper, were within the lumen. But this he accomplished by making a secondary longitudinal incision, which he closed with Lembert stitches.

The method here presented, where the knots of all the stitches are within the lumen, was first employed by the author in October, 1898. The possibility of placing all the knots within the lumen in enterorrhaphy is no longer in doubt, but the advisability of such a procedure is still a disputed question with those who never used it.

The chief objection raised to such a location of the knot, is that it necessitates the perforation of all coats of the bowel wall. But the perforation of all coats when the knot is placed within the lumen, and the perforation of all coats when the knot is in the peritoneal cavity, are not the same. These two conditions differ so widely in practice that they cannot be placed in the same class.

It may be admitted that in both cases a communication is established between the lumen and the serous coat of the bowel wall, with the resultant possible danger of leakage followed by peritonitis, either general or local, depending upon the virulence or quantity of the infective material and the natural resistant power of the peritoneum. However, we are led to believe that even with the knot on the serosa, this danger must be small, as the instances where the needle penetrates into the lumen while endeavoring to take a Lembert stitch must be numerous. The fact that the danger is not great can be seen from the results by T. H. Manley following the method of M. E. Connell.

Yet this danger, no matter how small, can and should be reduced materially by reversing the stitch. Then it will be inserted so that the knot is within the lumen, leaving but little, if any, of the loop on the peritoneal surface. By this simple reversal, the danger of infecting the peritoneum by using a stitch that perforates all coats, is reduced to a minimum and is practically removed.

In support of this position we point to the results obtained by original experimentation, and the nineteen cases on the human being herewith reported, as well as the cases of Maunsell and his followers.

With the knot on the serosa, there are present the following conditions: 1. The major portion of the stitch, the knot and ends, is in the free peritoneal cavity. 2. The size of this portion, the knot and ends, prevents perfect apposition of the serous surfaces external to the knot. 3. The drain, the suture material, is broken on the serous coat at the cut ends, so that if capillary action does convey infective material through the wall, it may siphon from the cut ends on to the peritoneum.

On the other hand, with the knot and ends in the lumen, and the loop perforating the serous coats, the conditions are exactly the opposite. They are in this case as follows: 1. The major portion of the stitch, the knot and ends, is on the mucosa, not in the free peritoneal cavity. 2. A small portion only of the loop can be in the free peritoneal cavity, and, if the square stitch is used, a much smaller portion is there than if the circular one is employed. This almost microscopic portion of suture material which passes directly through the two apposed serous surfaces, allows of ample sero-serous apposition distal to it. Thus it is isolated entirely from the free peritoneal cavity. 3. That portion of the stitch between the serosæ of the apposed bowel walls is continuous, not broken, at this point. The natural tendency will then be for the infective material, if it ascends, to pass along the path of least resistance, i.e., from the knot and ends on the mucosa, along the suture material, through all coats of the apposed walls and back again to the knot on the mucosa, there being no knot on the serosa to check and spread it. As Dr. Ferguson[1] has tersely expressed it: "All the knots being on the internal aspect of the bowel, it takes very little sero-lymph to seal up the peritoneal surface, and any drainage that takes place along the suture from the mucosa towards the peritoneum, will be at once returned by capillary attraction to the inside of the bowel." (See Fig. 5.)

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From these conditions it may be concluded that the ideal location for the knot is outside and not inside of the peritoneal cavity. As it is impracticable to place it outside of the abdominal wall, it is located in the lumen of the canal, which is still outside of the peritoneal cavity.

Deductions from the above would indicate that stitches which perforate all coats of the bowel wall should be knotted in the lumen. And, conversely, a stitch which is knotted on the serosa should not communicate with the lumen.

That brings up the questions: Is it possible to introduce a firm intestinal suture without communicating with the lumen; and again, if possible, is it practicable?

It is now generally conceded that an intestinal suture to be reliable must include some part of the submucous layer, the one coat of the intestine which has textile strength, and which offers more resistance than will the muscular coats and the serous coat combined. In order to properly introduce an intestinal suture which is knotted on the serosa, the stitch must *penetrate* but *not perforate* the submucous coat. Penetrate to prevent yielding, for "a stitch that includes only the two outer coats yields like putty." But it must not perforate, to prevent infection by capillarity, for, "if the submucosa is perforated the intestine is almost certainly entered."

On the other hand, if all coats are included, and the knot is located in the lumen, no attempt to split the submucosa is necessary.

Halsted,[2] in speaking of this coat, said:

> It is remarkable that no one has recognized the important part which this coat should play in operations for intestinal suture. It is still more remarkable that surgeons could have altogether overlooked the existence of the submucosa. And, it is perhaps most remarkable that experimenters and writers should without exception believe that it is possible to take a stitch of the peritoneal coat alone. The crude views of Jobert and Lembert, as to the construction of the wall of the intestine, have been universally accepted by surgeons up to the present time. The peritoneal coat is believed to be thick enough, and sufficiently strong to hold a stitch, and the existence of the submucous coat has been ignored.

Kelly[3] calls attention to this as follows:

> Regarding the fibrous coat of the intestine, the most valuable contribution which has yet been made to intestinal surgery is the demonstration by Dr. Halsted, of the fact that the essential feature in any suturing or anastomotic operation is the employment of the submucous intestinal coat.

It may not be out of place to call attention to what appears to be an error that has gained wide circulation. That it was unintentional is not to be doubted, nevertheless it is remarkable that two acknowledged authorities should entirely overlook the researches, experiments, observations and conclusions of a man who might be called the father of American surgery. For it is evident that they are not familiar with that classic on intestinal surgery, published in 1843 by S. D. Gross, then of Louisville, Ky., who made observations on this same coat, as will be seen in his monograph entitled, "An Experimental and Critical Inquiry into the Nature and Treatment of Wounds of the Intestine."

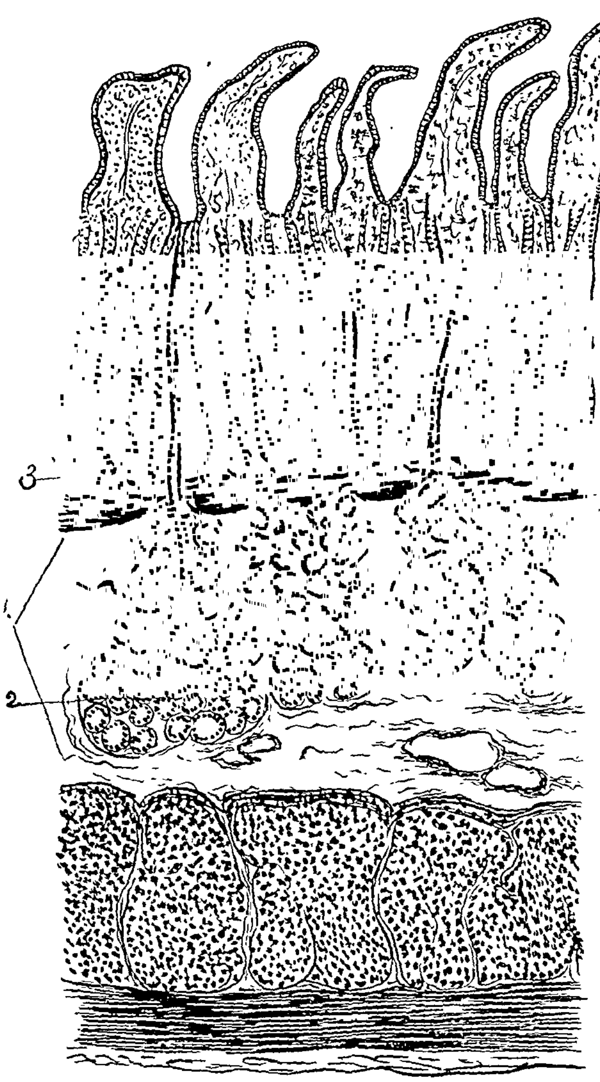

Fig. A.—Section of duodenum (after Piersol). 1. Submucous coat. 2. Glands of Brunner. 3. Duct of gland.

On the structure of the alimentary canal, while speaking of the "outer membrane," he says: "Hence, if, in sewing up a wounded intestine, the ligature be merely carried through the serous investment, it will be almost certain to be torn out." And further, after speaking of the "muscular tunic," he says: "Lying beneath this muscular plane is the celebrated *nervous tunic*, as it was called by the *ancient* writers. Alternately admitted by some, and rejected by others, this layer has been recently described by Monsieur Cruveilhier, under the name of the *fibrous lamella*, in consideration of its structure, which closely assimilates itself to that class of tissues. . . . Strong and resisting, it is semi-transparent and devoid of elasticity. . . . The filaments, of which it consists, interlace with each other in every conceivable manner, forming thus a very close network. . . . It readily reunites when divided, as *I have witnessed in numerous experiments,* and deserves to be attentively studied, *as it is the membrane through which the surgeon should always carry his needle in sewing up wounds of the intestine.*" (Italics are ours.) Thus proving that he not only knew the anatomical peculiarities and properties of this layer, but that at this early date, 1843, he also realized the importance of this layer from an operative standpoint, and emphasized its surgical significance.

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[1] Chicago Med. Rec., December, 1900.

[2] Johns Hopkins Hospital Bulletin, 1891.

[3] Operative Gynecology, vol. ii, p. 50.

In considering the first question above proposed we should bear in mind the location of Brunner's glands.

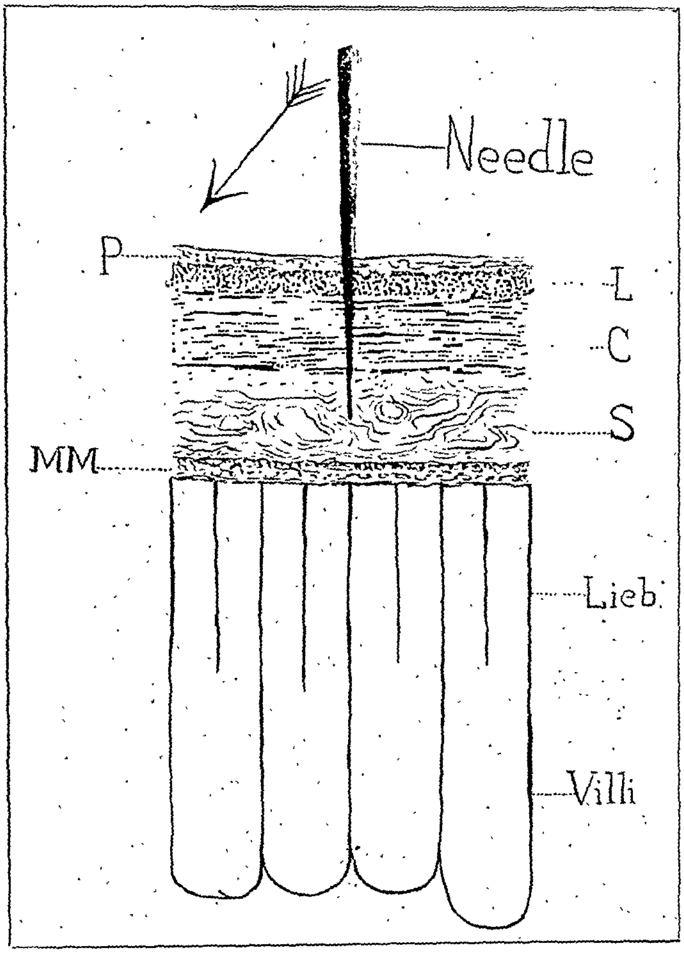

Fig. B.—P, Peritoneum; L, Longitudinal muscle; C, Circular muscle; S, Submucosa; MM, Muscularis mucosa; Lieb, Glands of Lieb. Reproduction of Dr. Halsted's illustration in J. H. H. B., 1891.

These are small, long and sometimes compound, lined with columnar epithelium, the duct of which opens upon the mucosa. These glands are peculiar, in that they are confined to the duodenum, and that the fundus is located in the submucosa. (Fig. A.)

If a stitch enters the serosa of the duodenum, and includes a part of the submucous layer, there is no certainty that it does not pass through one or more of these glands of Brunner. Should this occur the result will be a stitch which penetrates the submucosa, yet communicating with the lumen and knotted on the serosa. Of course, each and every stitch put into the submucosa of the duodenum may not involve the fundus of a Brunner gland. But, not knowing their exact situation, they can not be intentionally avoided. Then as this danger—communication with the lumen—can not be purposely excluded, it is an unsafe procedure to insert in the duodenum stitches which include the submucosa and are knotted on the serosa.

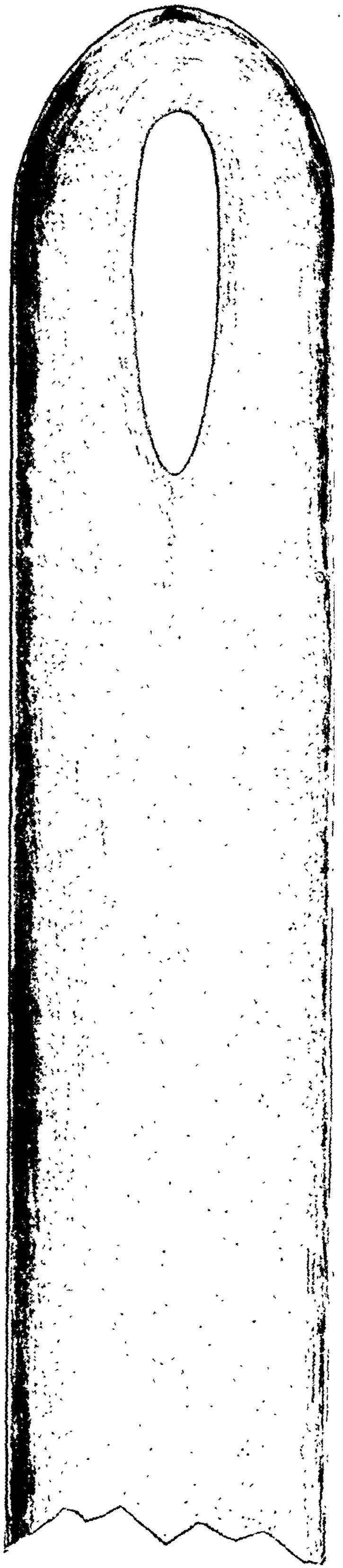

Fig. C.—Ordinary intestinal needle (No. 8), enlarged an equal number of times as is the intestine in Fig. B.

Similarly unsafe, on account of yielding, are stitches which do not include the submucosa. To diminish the first danger—capillarity — and eliminate the second—that of yielding — stitches are used which include all coats and are knotted in the lumen. This will, of course, apply to the operations of pyloroplasty, pylorectomy and gastro-duodenostomy.

Then, to the question—is it possible to introduce a reliable intestinal suture without communicating with the lumen?—the answer must be in the negative, as far as the duodenum is concerned. In the remainder of the intestinal tract there is no objection to the stitch including but a portion of the submucosa, if that be feasible.

Halsted, in his remarks on the importance of the submucous layer, also dwelt upon the fact that for years eminent men had described the Lembert stitch as including but the peritoneal coat. This, he concluded, was impossible, owing to its extreme thinness. The extreme thinness of the submucosa, which is but ten times as thick as the peritoneum (Edmund and Ballance), in turn leads us to doubt the practicability of including but a portion of this coat in a stitch.

In Dr. Halsted's original article is found a detailed description of the technic employed, which enables one to insert the needle in such a manner that the submucosa is "penetrated, but not perforated."

To elucidate this feat is presented a schematic drawing of the intestinal wall, showing the relative thickness of the various layers, with the needle in the act of picking up a part of the submucosa without going through it. The intestinal wall in this drawing is magnified about 32 times, but the artist neglected to magnify the needle. It thus conveys to the observer an erroneous conception as to the relative proportion between the ordinary intestinal needle and the submucosa.

Figure B is a reproduction of the illustration in Dr. Halsted's article. Figure C represents a No. 8 round sewing needle magnified in diameter an equal number of times as is the intestinal wall of Halsted, and which, if represented at full length, would extend 48 inches, and at its greatest width would be four-fifths of an inch. A comparison of these drawings will give an idea of the difficulty one may anticipate in endeavoring to pick up with a needle that is one-fortieth of an inch in diameter but a part of the submucosa, which, according to Edmunds and Ballance, is 1-250 of an inch thick. There is a proportion of 6 to 1 in favor of the needle.

Finally, in answer to the question as to the possibility of introducing a proper intestinal suture without entering into the lumen, we say that in locations other than the duodenum it may be possible for the most expert, but for the average surgeon such an attempt seems impracticable. Therefore, realizing the importance of the submucous coat, the difficulty of splitting its fibers, and the danger of yielding, on the one hand, if it is not included, and that of capillarity, on the other, if it is perforated, we choose between evils. We decide to run the greatly reduced risk of capillarity, in order to positively exclude yielding with its 25 per cent. mortality, by recommending a suture which includes all coats and is tied on the mucosa. One which can be placed with certainty, and one in which the submucosa is secured in every stitch.

The historical progression of the intestinal suture, with reference to the structures included within the stitch, shows also five stages concomitant with the involution of the knot. They are as follows:

1, the suture including all coats, the knot on the serosa; 2, the suture including peritoneum only; 3, the suture including peritoneum and muscularis; 4, the suture including peritoneum, muscularis and submucosa, and, 5, the suture including all coats; knot in the lumen.

ADVANTAGES.

The chief advantages to be derived by penetrating all coats of the intestinal wall and placing the knots within the lumen are: 1. Less danger of peritonitis, through leakage at stitch hole. 2. No yielding of stitch. And among the other commendable points may also be mentioned: 3. Adhesions diminished. 4. Small diaphragm. 5. Less danger of gangrene. 6. No foreign body; suture material will all pass away. 7. Time decreased.

Leakage.—Clumski, in a recent contribution on the subject of intestinal union, states that in all cases of union by suture alone in which leakage occurred, the seat of the leakage was at the site of the knot.

Yielding.—If the submucous coat is not included in the stitch, yielding is liable to take place. In an effort to avoid penetrating into the lumen, when introducing the ordinary Lembert stitch, one is apt to be overcautious and so fail to include any portion of this layer. That yielding of stitches, from this or other causes, is one of the most frequent factors in failure of enterorrhaphy can be seen from the statistics of Rosenthal, who, in 1892, collected 151 cases of intestinal resection followed by end-to-end union, with a mortality of 42.3 per cent., and 50 per cent. of this rate due to peritonitis. He is reported in the translation by Harris as follows: "The frequency of peritonitis was owing to the escape of feces into the peritoneal cavity, due to the inefficiency of the suture or to fecal accumulation. That perforation peritonitis claimed the most victims is a striking proof of the inefficiency of the present methods of intestinal suture." With a single row of stitches which include all coats instead of two or more rows, each including but a portion of the intestinal wall, the danger of yielding, because of not including the submucosa, is positively excluded.

Adhesions.—Concerning adhesion following an intestinal suture, Halsted says: "The success of any form of intestinal suture is inversely proportionate to the extent of the adhesions which result from the employment of the particular method." The most active cause of these post-operative adhesions are the bulky knots and ends, which irritate the adjacent organs or tissue coming in contact with the site of the union. Such adhesions are quite common when the ordinary suture is used, less so if the mattress suture is employed for the knot is not so prominent as it is when located on the top of the joint, as in the ordinary stitch, and still less common after the use of the Murphy button, Frank coupler, or methods of union in which the knots are in the lumen. It has been said that these adhesions tend to strengthen the joint if they do not form bands, underneath which a loop of intestine could become strangulated. Even if no such grave result follows their formation they may act as a cause of vague, indefinite or perhaps marked uncomfortableness, tenderness or pain, which may do considerable toward producing a condition of chronic invalidism.

Diaphragm.—Diaphragm formation is an absolutely unavoidable result following any method of union which adheres to the Lembert principle, i. e., sero-serous apposition. But the size of this diaphragm may range from one so small as to be practically insignificant, to one of sufficient size to occlude the bowel lumen and cause obstruction. The variation depends entirely upon the methods of union employed and the care with which the technic is carried out. In methods requiring two or three rows of sutures the lumen of the tube will of necessity be encroached upon to a greater extent than it will be by a method in which but one row of stitches is employed. In examining specimens after performing the Maunsell method a marked projecting ridge is to be seen on the mucous surface, at the site of the longitudinal incision, which is closed with Lembert stitches, while at the site of the circular suture it is located with much more difficulty. That this diaphragm is practically the only form of post-operative stricture, and that stricture due to cicatricial contraction rarely, if ever, occurs, has been well brought out by W. A. Evans. That a broad serous approximation is unnecessary has been emphasized by J. B. Murphy in his statment that, "A line of approximation is as good as half an inch."

Less Danger of Gangrene.—The single row of stitches instead of multiple layers is advantageous in that there is no danger of interfering with the blood supply of the inverted cut ends. This fact is emphasized by Maunsell when he says, "A double line of sutures should never be applied in intestinal surgery. It obstructs the circulation too much, interfering with firm plastic peritonitis, and in some cases causing gangrene of the inverted portion of the gut." And similarly by Senn as follows: "That the second row of sutures in the Czerny-Lembert has often been the cause of gangrene of the inverted margin of the bowel would not be difficult to prove by many postmortem records."

No Foreign Body.—A stitch which penetrates all coats and is knotted on the mucosa will early and invariably pass away. The ordinary intestinal suture including but a portion of the wall and knotted externally, will become encysted and remain as a foreign body or will migrate directly through the intestinal wall into the lumen and pass off with the feces. If it remains encysted, it may give rise to symptoms more or less objectionable, if not dangerous. In this connection Bishop says: "If it is convenient, if not necessary for a stitch to pass away after its mission is completed, it is better that it penetrate all coats of bowel than if it penetrate only peritoneum." Cases are on record in which, at the autopsy six or twelve months after the operation, there has been found the suture, still partially attached to the wall, so liable, especially if continuous, to cause obstruction at any time. In the writer's animal experimentation, the suture had always disappeared in all specimens which were removed after the fourth week. In one instance, on removal of a twenty-one days' specimen when flushing out the canal, the continuous suture, entirely free, came away with the débris.

No.	Operator.	Indications.	Operation.	Suture.	Material.	Result.	Remarks.
1	F. H. Martin . .	Fecal fistula	Circular enterorrhaphy.	Continuous . .	Silk. . . .	Recovery .	JOURNAL A. M. A., Nov. 3, 1900.
2	E. W. Andrews .	Benign stricture of pylorus.	Pyloroplasty. . . .	" "	" . . .	"	
3	" "	Fecal fistula	Circular enterorraphy.	" "	" . . .	"	
4	" "	Carcinoma of pylorus	Pylorectomy . . .	" "	" . .	Death. . .	Shock same day.
5	Emil Ries. . . .	Rent in rectum, 4/5 of circumference.	Longitudinal enterorrhaphy.	" "	Catgut . .	Recovery .	
6	W. E. Schroeder	Gunshot wound. . . .	Longitudinal enterorrhaphy,	" "	Silk. . . .	"	Eleven perforations: Czerny-Lembert and Murphy button also used.
7	A. H. Ferguson..	Carcinoma of colon. .	Circular enterorrhaphy.	Interrupted. .	" . . .	"	
8	F. G. Connell . .	Fecal fistula	Circular enterorrhaphy.	Continuous . .	" . . .	"	D. A. K. Steele's case.
9	A. H. Ferguson..	Carcinoma; pylorus, pancreas and liver.	Pylorectomy. . . .	Interrupted. .	" . . .	Death. . .	Eighth day; in the afternoon field of operation was perfect.
10	" "	Carcinoma of pylorus	" . . .	" "	" . . .	Recovery .	Smoked pipe on second day.
11	E. W. Andrews..	Strangulated hernia..	Circular enterorrhaphy.	Continuous.. .	" . .	Death.. . .	Patient in extremis; died one-half hour after leaving table.
12	A. H. Ferguson..	Fistula bimucosa and adhesions to pelvic viscera.	Circular enterorrhaphy.	Interrupted. .	" . . .	Recovery .	
13	E. W. Andrews .	Benign stricture of pylorus.	Pyloroplasty . . .	Continuous.. .	" . . .	"	
14	W. E. Schroeder	Biliary fistula	Longitudinal enterorrhaphy.	" "	Catgut . .	"	
15	H. O. Walker.. .	Chronic invagination of ileum.	Circular enterorrhaphy.	" "	Silk. . . .	"	
16	A. E. Halsted..	Benign stricture of pylorus.	Pyloroplasty . . .	" "	" . . .	"	
17	F. G. Connell.. .	Fecal fistula	Longitudinal enterorrhaphy.	" "	" . . .	"	Denslow Lewis' case. Tubercular peritonitis and and fistula for one year.
18	W. E. Schroeder	Gunshot wound. . . .	Circular enterorrhaphy.	" "	" . .	"	
19	A. H. Ferguson..	Carcinoma of pylorus.	Pylorectomy . . .	Interrupted. .	" . . .	Death. . .	Shock; twelve hours.

Since this report was presented, this suture has been employed in ten additional cases.

Time Decreased.—In post-graduate work Dr. E. Reavely, Silverton, Colo., has performed an experimental enterorrhaphy in nine minutes. This time including the opening and closing of the abdomen.

At a meeting of the Chicago Medical Society, December, 1900, at which the first case of enterorrhaphy all knots in the lumen was reported by Dr. F. H. Martin, and 4 others mentioned by Dr. E. W. Andrews, it was suggested in discussion "that we be extremely cautious in reaching conclusions on such a small experience." Since that time the number of cases where such method has been employed has increased to 19. This may be a small number upon which to draw conclusions, but the results are very encouraging, and it is thought that the method is worthy of consideration.

In the 19 cases on the human being there were 4 deaths, due to the following causes:

In No. 4, pylorectomy for carcinoma, death occurred on the day following the operation, from shock. In No. 9, pylorectomy, with removal of the head of the pancreas, and a portion of the liver, the patient died eight days after the operation. An autopsy in the presence of Drs. Ferguson, Ries and Morgan revealed the line of suturing to be intact. In No. 11, circular enterorrhaphy for strangulated hernia, death followed immediately after the operation, as the result of shock. And in No. 19, pylorectomy, for carcinoma, death occurred from shock within twelve hours after the operation. So it may be said that in none of these four cases can the death be attributed to either the method of suturing employed or the manner of applying it.

Animal experimentation in the original work on this method resulted in 100 per cent. of recoveries. It is recorded that experimental work in this method by student practitioners at the Post-Graduate School of Chicago yielded but 3 per cent. of deaths. The inexperience of these men in intestinal surgery should be remembered when considering this mortality rate.

The Maunsell method is imperfect in that all knots are not within the lumen. The secondary longitudinal incision is closed with Lembert stitches, and the invagination of the cut ends is many times difficult, dangerous and time consuming. This method is also objectionable in that a circular-loop stitch is employed, which allows a considerable part of the suture material to remain on the peritoneal side of the bowel, and it may not hold the free cut ends in as proper position as will the square-loop stitch.

In order to do away with these disadvantages of the Maunsell method the suture here presented, with all knots on the mucosa, was devised by the author in October, 1898. The technic is described with the aid of the drawings here presented. (Interrupted suture.)

Figure 1 represents the first or mesenteric stitch in place. It is at this mesenteric portion of the bowel that the greatest difficulty is experienced when making an enterorrhaphy by any method. This is owing to the presence of the mesentery, the blood vessels, and, what is of greatest importance, the V-shaped space left by the separation of the two layers of the peritoneum.

This anatomic formation leaves a longitudinal strip of bowel devoid of serosa, over which the peritoneum must be drawn, before a perfect sero-serous union can be secured. This particular manner of passing the mesenteric stitch can be recommended in any enterorrhaphy regardless of the method which may be chosen to close the remainder of the circumference.

To take this stitch the needle is made to enter, from the lumen, the bowel wall of one cut end, perforate all coats, and pass through the serosa of one side of the triangular space. Then over to and into the serosa of the opposite cut end, at the same relative point—side of the triangular space—then through the wall into the lumen. This completes one-half of the stitch, and is made with one move of the needle. The needle is then reversed, and, at a distance of about one-eighth of an inch, is made to enter the mucosa of the second cut end, pass through all coats of the bowel wall, including the serosa of the triangular space, and then through the serosa of the opposite triangular space of the first cut end, on through the wall into its lumen, where the needle end and the free end of the stitch are tied on the mucosa. This stitch absolutely secures a perfect approximation at this point.

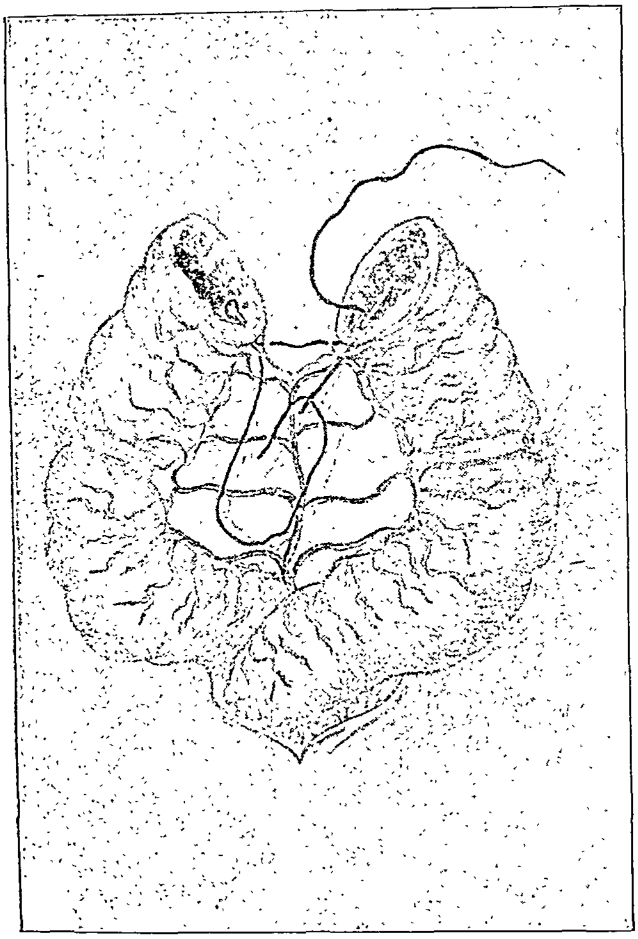

Fig. 1.—Mesenteric stitch.

Figure 2 shows the mesenteric stitch as tied. The ends are not cut off at this point, for they can be utilized as a suspending loop, or guy-threads (No. 1). At a point about one-third of the circumference to the right of the mesenteric attachment a similar stitch is inserted, the ends of which are left long to form a suspending loop or guy-threads (No. 2). This stitch is exactly similar in its placing to the first stitch inserted. The needle begins on the mucosa, goes through mucosa and serosa of the first cut end, then enters the serosa of the second cut end and passes through all coats, then returns at a distance of about one-eighth of an inch, passes through the mucosa and serosa of the second cut end, and on through the serosa and mucosa of the first cut end into the lumen, where the knot is then tied on the mucosa.

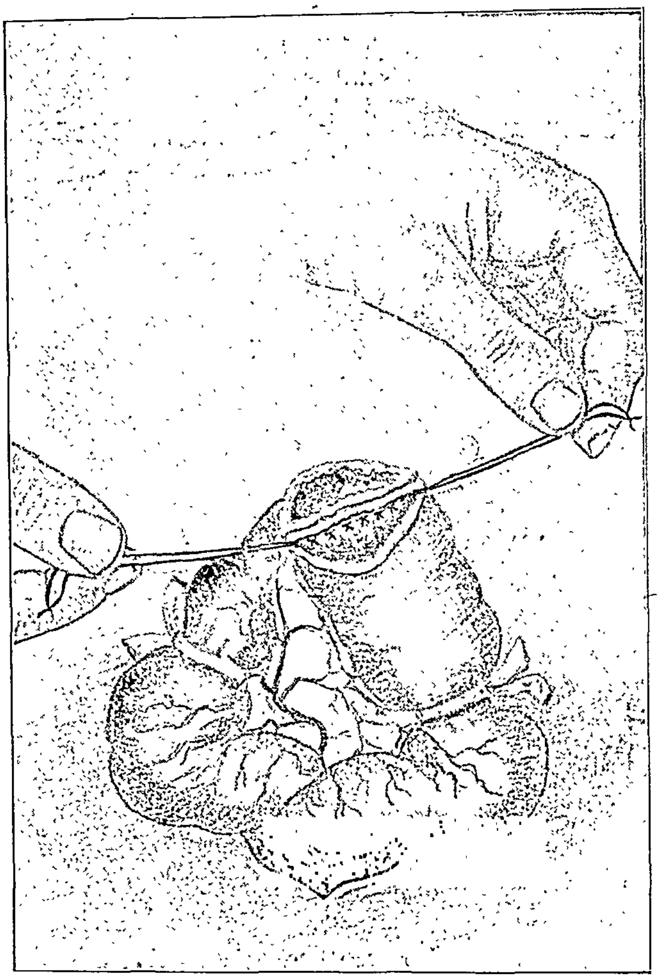

Fig. 2.—First third sutured. End stitches used as guy threads No. 1 and No. 2.

Guy-threads 1 and 2 are held taut, and the coapted walls are secured by the necessary number of stitches, inserted as the one above described. These loops, or guy-threads, consume no time, as after the ends are cut all that remains is a stitch in its proper place. They hold the intervening portion of the bowel circumference in the proper position, that of sero-serous apposition, so that, in making what we term the square stitch, with one movement of the needle, the mucosa and serosa of one side, with the serosa and mucosa of the opposite side are included. A second movement of the needle includes the same coats in an opposite direction, and completes the stitch to the point of knotting on the mucosa.

Instead of the one-third division of the circumference of the bowel it may be divided into halves. But by dividing it into thirds a full two-thirds can be united by this easy to-and-fro movement of the needle, while the apposing cut ends are held in coaptation.

There is, then, but one-third to be closed by the final stitches. These are few in number, but they require more movements, and are, therefore, more difficult and time consuming.

If the circumference be divided into halves only one-half will be united while the parts are in the favorable position. Instead of guys of any description the holder of Dr. E. H. Lee may be used. This is a very efficient aid and can be highly recommended.

This rectangular method of suturing, or the square stitch, is to be preferred to the circular. In using a simple circular stitch, as did Maunsell, there is danger of a resulting infection of the peritoneum, because the margins of the gut wall included in the bite of the stitch are liable to slip and lead to fistula, if nothing worse. Or, infection may travel along the suture material to the free cavity, for the external portion of the stitch is not so completely buried between the apposed surfaces as in the square stitch.

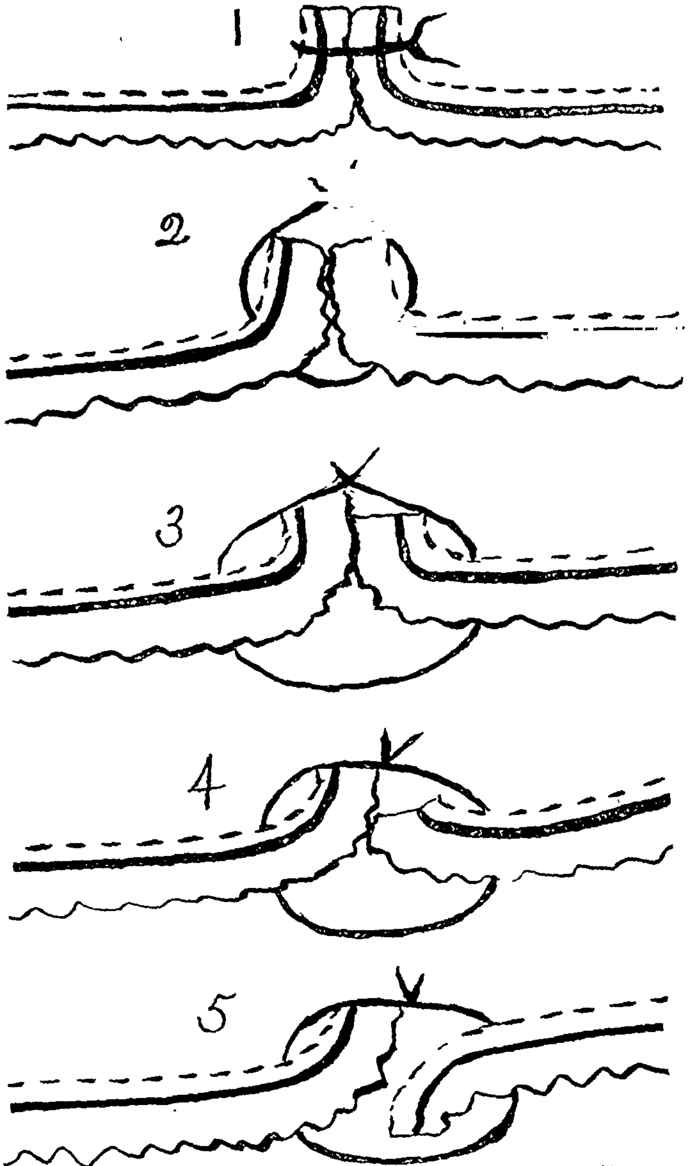

Fig. D.—1. Square stitch, margins can not slip. 2 to 5. Circular stitch, margins can slip.

The possibility of the cut edges slipping by one another when included in the circular-loop stitch is shown in the accompanying cut (Fig. D).

In Figure D, 2 represents the ordinary circular or Maunsell stitch, including within its grasp the inverted margins of the cut ends; 3 shows the relative position which the suture and bowel ends may assume, owing to pressure or distension; 4 illustrates the condition which may follow if more force be applied to one cut end than to the other; and then if, with a slight aggravation of the cause, the pressure increases, one cut edge slips by the opposite cut edge, and a sero-mucous apposition results, as shown in 5, a sinus connecting the lumen of the bowel and the peritoneal cavity, with a fecal fistula as a very favorable outcome. 1 illustrates that, with the square stitch, such an occurrence can not take place.

Guy-thread No. 2 has been removed; that is, the ends which were left long after tying the stitch at that point have been cut away. And at a point one-third of the circumference to the left of the mesentery a stitch is inserted, tied and the ends left long, as guy-thread No. 3. This brings into the proper position for suturing the second one-third of the bowel circumference.

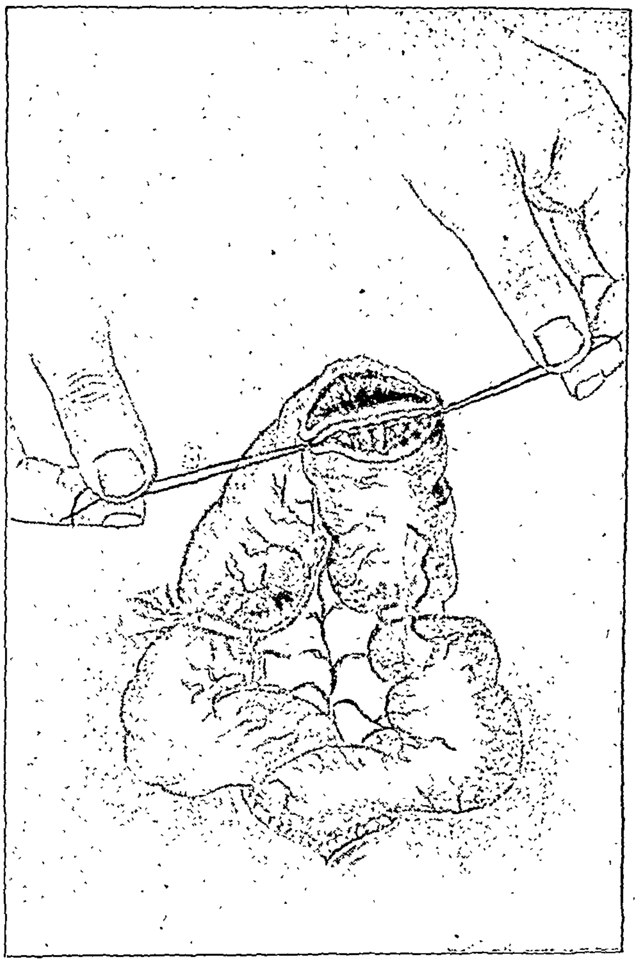

Fig 3.—Second third sutured. Guy threads No. 1 and No. 3.

The guy-threads 1 and 3 are now held taut, and the intervening space sutured, as was the first one-third.

The guy-threads 1 and 3 have been cut away, and the intestine will assume its normal position. It will be observed that at this stage a transverse section of the bowel has been transformed into a wound extending but one-third of the circumference, at the convex border.

The most difficult two-thirds of the enterorrhaphy, the mesenteric, has been completed. The remaining convex third must be closed by sutures exactly similar to those used in the first two-thirds. That is, the needle passing through opposite walls in the following order: Mucosa, muscularis and serosa; serosa, muscularis and mucosa, and this same order repeated in the opposite direction, one-eighth of an inch away. This brings the knot at one side of the union, in the lumen.

Owing to the impossibility of bringing the intestinal walls of this last one-third in the same relative position, that of sero-serous apposition, before the introduction of the stitches, it is necessary to proceed somewhat differently in order to arrive at the same result.

The needle enters the gut wall from the lumen, passes through all coats and emerges from the serosa of one side. It then crosses over to the opposite wound margin and enters the gut wall from the outside; passes through the serosa, the muscularis, then the mucosa and into the lumen. The needle is then turned upon itself and made to retrace its steps at about one-eighth of an inch distant. It passes from the lumen through all coats, emerging on serosa, then over to the opposite side, entering through the serosa, muscularis and the mucosa, into the lumen.

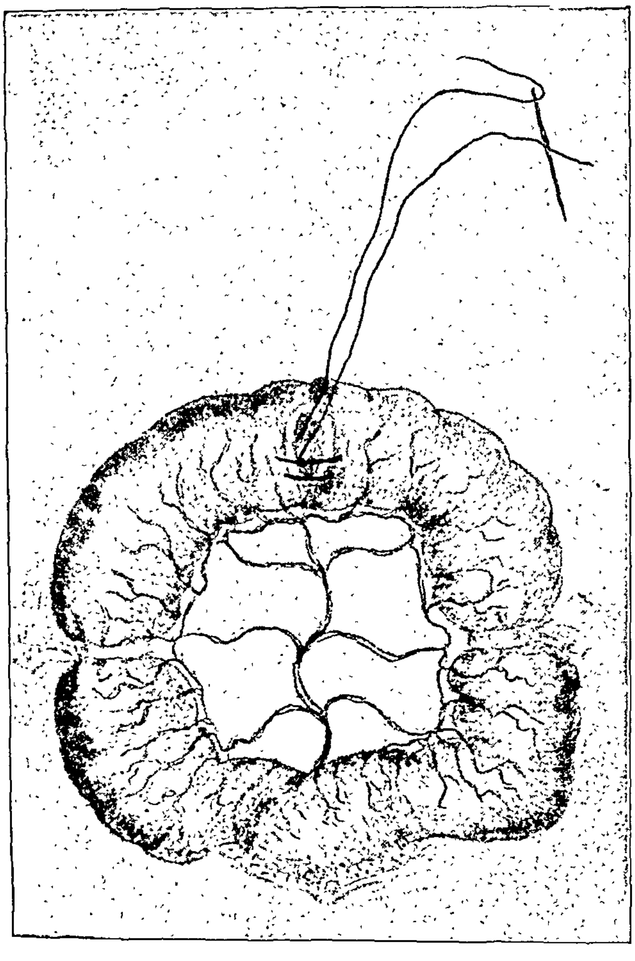

Fig. 4.—Two-thirds completed. First stitch in last third.

Now after drawing this stitch tense and tying it on the mucosa we have, as a result, the same sero-serous apposition as was effected in the first two-thirds. This step is repeated till the last stitch is to be tied.

On account of the small unsutured space remaining it is impossible to tie this last knot on the mucosa in the ordinary way. This last stitch is inserted in the same manner as were the others in this last third, but its two ends emerge from the mucosa, and out of the lumen through the still unclosed portion of the wound, side by side, ready for tying.

At a point in the line of union about opposite this last stitch a threaded needle is inserted, eye-end first, between two of the previously inserted stitches. The needle eye is passed between the apposed serous surfaces into the lumen, and then out again at the place where the last stitch ends still protrude. At this point we find the two threads which, when tied, will form the last knot. The threaded needle is slightly withdrawn and so forms a loop with its thread. Into this loop are placed the ends of the last stitch. Then, by withdrawing the needle, and in its loop the stitch ends, they will present on the peritoneal coat of the opposite side, at the point where the needle was previously inserted.

Slight traction upon these ends will cause the remaining portion of the line of union to become inverted, and sero-serous approximation will obtain entirely around the bowel. On further traction the bowel will become flattened, bringing the mucous membrane, upon which the last knot is to be located, in intimate relationship with the line of suture, at the point where the free ends protrude.

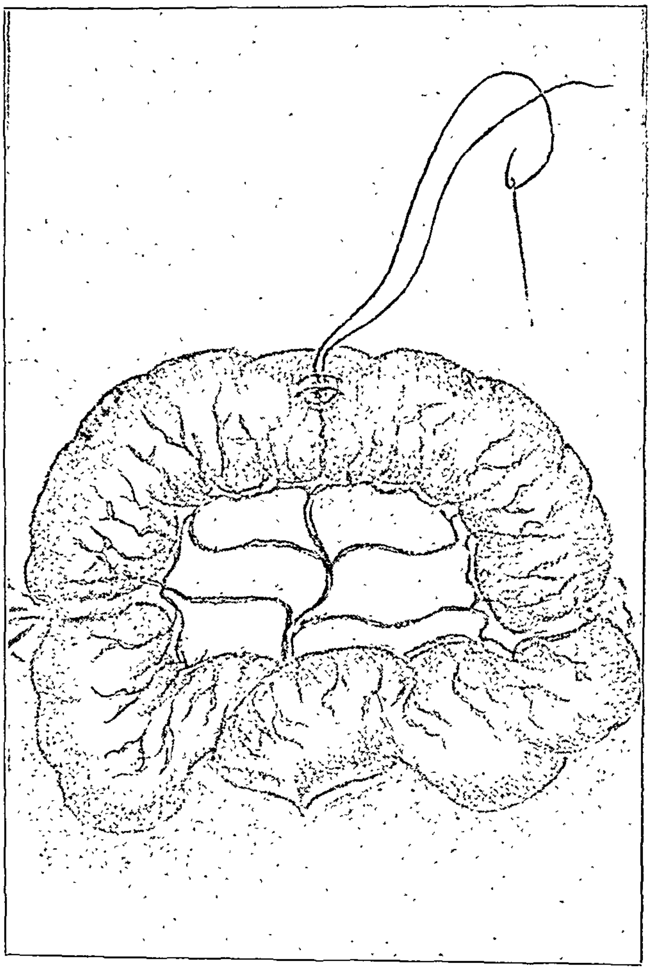

Fig. 5.—Last stitch in last third.

The knot is then tied while the bowel wall is in this position, thus not allowing of any slack. While still retaining the tension and the flattened position the ends of the stitch are cut off short, so preventing the dangling of long free ends in the lumen.

Now, upon allowing the bowel to resume its natural contour, that of a cylinder, the knot will slip, between the already tied stitches, into the lumen. And, as it is fastened to the mucosa of the opposite pole of the diameter, it goes with that portion of the bowel wall.

By this procedure the enterorrhaphy is completed, with all knots on the mucosa. The bowel is then washed with hot normal salt solution and replaced in the abdomen.

The drawings here presented demonstrate the use of the interrupted stitch. This was done, because, in all previous descriptions[4] of this method, the continuous suture was illustrated with a view to the time-saving feature. And also, to demonstrate that either the continuous or interrupted suture may be as satisfactorily employed.

This method may be applied equally well in circular enterrorrhaphy, lateral anastomosis, pylorectomy, pyloroplasty, gastro-enterostomy, and in incised wounds. In fact, under any condition where the ordinary suture may be employed.

CONCLUSIONS.

1. Yielding and leakage are the most frequent causes of failure in enterorrhaphy.

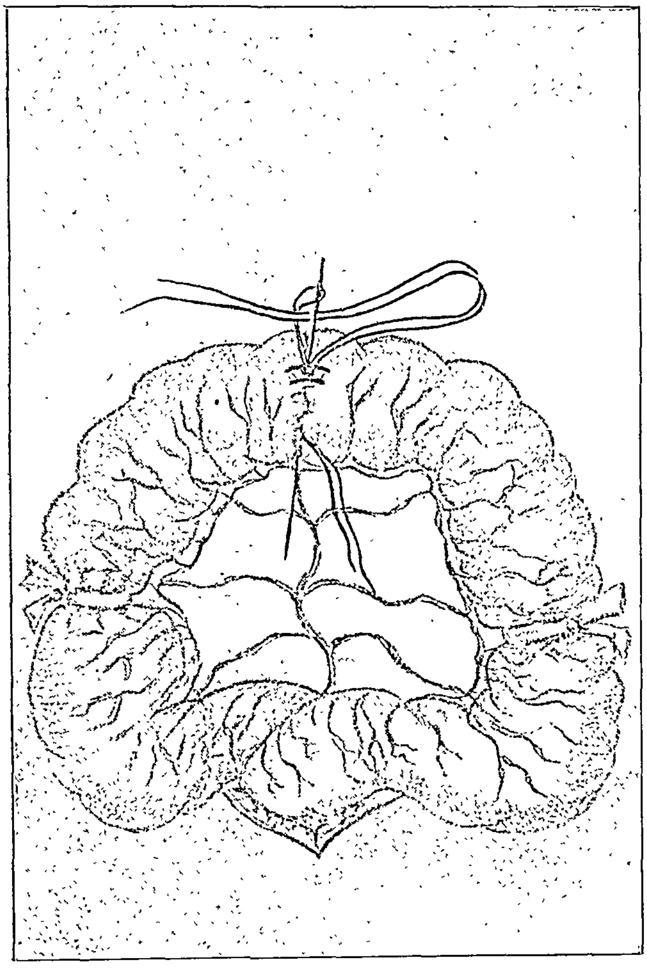

Fig. 6.—Ends of last stitch in loop of threaded needle. Previous to withdrawal.

2. To include all coats of the bowel wall, removes the danger of stitch-yielding.
3. To place the knot within the lumen, diminishes the danger of capillarity.
4. The square-loop stitch is more reliable than the circular-loop stitch of Maunsell.
5. The relative thickness of the needle, and the submucosa, surrounds the procedure of "penetration without perforation" with great uncertainty.
6. To fail to include the submucosa, leaves a weak stitch.
7. To perforate the submucosa is practically to open into the lumen.
8. To penetrate into the submucosa of the duodenum, is practically to perforate the submucosa.
9. It is not only possible, but practical and advantageous, to place all the knots of an enterorrhaphy within the lumen.
10. The ideal location for the knot is outside of the peritoneal cavity.

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DISCUSSION ON PAPERS OF DRS. DEAVER, LAPLACE AND CONNELL.

Dr. D. A. K. Steele, Chicago—I am glad that there is one hospital in this country where autopsies can be held after each death, even where there are occasional legal complications attending them, because that is the only way in which scientific surgery can make positive advances. All of us have cases of appendicitis that die, and die unexpectedly sometimes, in which it was impossible to obtain the consent of friends to permit an autopsy, and it places us in the humiliating position of saying, "I do not know why that man died." Dr. Deaver can tell us in all of his cases the "why." I had in my own experience a child of 3 years who was brought to my clinic for the purpose of having an appendectomy done, in the late development of an appendicitis—at the expiration of perhaps a couple of weeks from the time of the pain and tenderness and tumefaction occurred in the region of the appendix, or possibly a little higher, and in which, upon eliciting the history of that child, I learned that the patient had, three months previously, in playing, placed a shawl pin in the mouth and it disappeared. Nothing was heard from it until two weeks before coming into the clinic; pain was located in the appendix, and when the child was brought to me there were the ordinary symptoms of tumefaction, tenderness, temperature and everything to indicate an acute infective appendicitis; but back of this was the history of the disappearance of the shawl pin. Nothing was

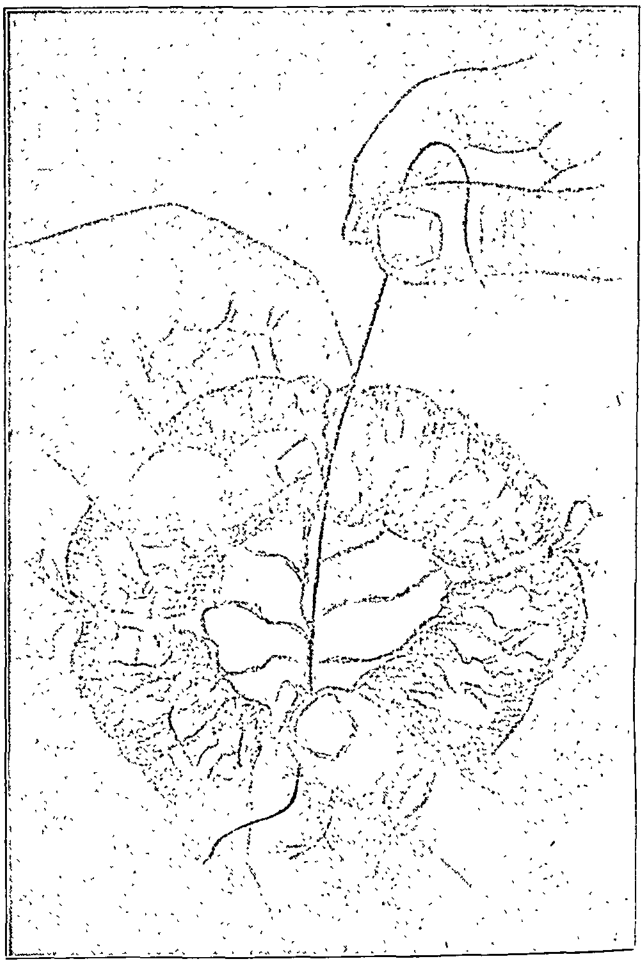

Fig. 7.—Ends of last stitch presenting at opposite side being tied.

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[4] Connell: Phila. Med. Monthly, January, 1899. F. H. Martin: Journal A. M. A., Nov. 3, 1900. E. H. Lee: Annals of Surgery, Janaury, 1901. Connell: Medicine, April, 1901.

discovered and there was doubt as to whether it was in the intestinal tract. The child was so young that the statement had to be taken with some allowance. This was simply opening an abscess, cutting down, slashing into it, putting my finger down and finding the point of the pin projecting into the inflammatory mass. It was a case of perforation of the intestine from the inner side, the pin projecting and an exudate around it. The disappearance of the shawl pin was marked by the disappearance of all the symptoms. I have had no personal experience with continuous irrigation in cases of septic peritonitis. Dr. LaPlace's method is a good one. When we get such good results from normal salt solution in septic joints, why should not the same idea be extended to the abdomen? If we keep continuous salt solution running through, this is the better procedure than leaving the salt solution in and flushing in an upward direction to secure the disappearance of the microbic organisms through the diaphragm. In regard to the paper by Dr. Connell, it is a masterpiece, the reasons he gives for his method of suture, placing knots in the lumen of the intestine where they are harmless, and the correct approximation. The advantage of this method I have had an opportunity of studying in one of my own cases.

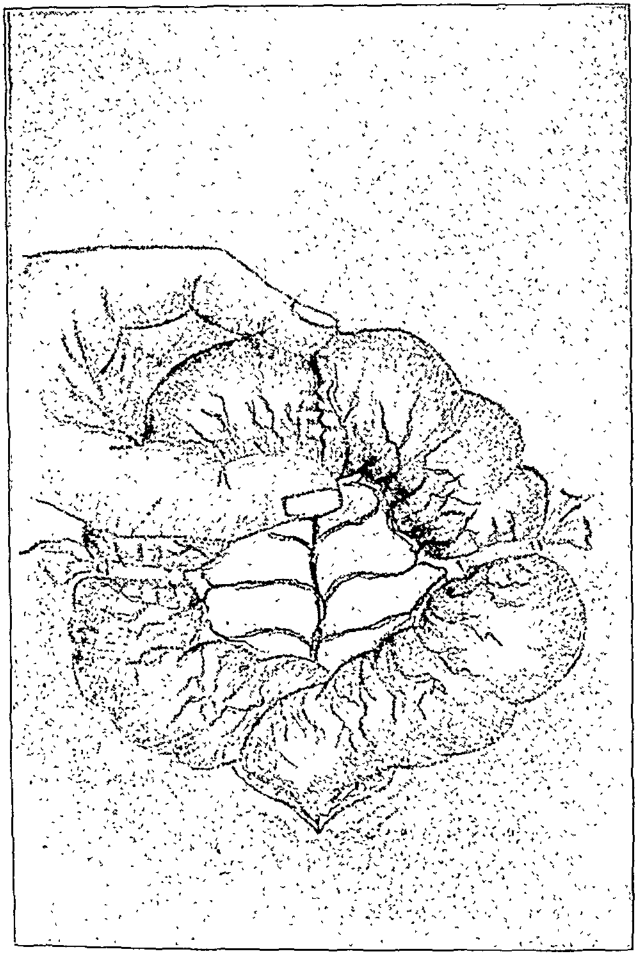

Fig. 8.—Last knot has slipped within the lumen. Enterorrhaphy is complete. All knots on the mucosa.

Dr. J. B. Murphy, Chicago—I was very much interested in the paper of Dr. Deaver, and as Dr. Deaver had to omit some parts of his paper, I will ask him some questions concerning the pathologic conditions, not mentioned therein, on which I fear we are not a unit. I wish not only to concur with Dr. Deaver in this particular paper, but also in many which he has read before on this subject. I think the members of the profession owe Dr. Deaver a debt of gratitude that I fear they will never be able to pay, for the work he has done in this line. In the strong stand which he has taken from the beginning as to the relation of the pathologic conditions, with the procedure necessary for their relief and the time in which that procedure should be instituted, Dr. Deaver has been the great leader. Regarding pathologic conditions, I wish to ask Dr. Deaver just what he means by "suppurative peritonitis."

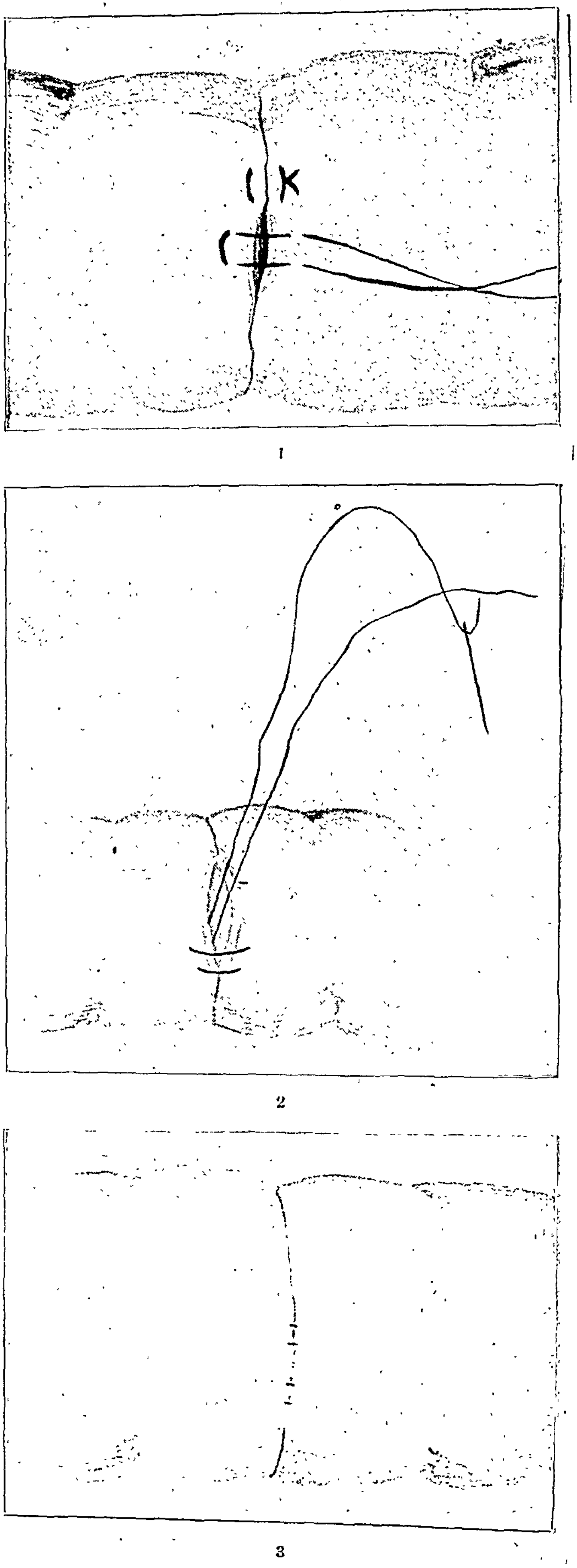

Fig. E.—1. Quilt stitch knot on serosa. 2 and 3. Square stitch knot in lumen.

I am sure that many of the members of this Section who are present do not understand exactly what he means by suppurative peritonitis. I am sure Dr. Deaver does not mean the condition where there is a cream-colored fluid in the peritoneal cavity, with a peritoneum that still retains its luster, for if he did, many men could say, "I have seen many cases of suppurative peritonitis recover." I feel that Dr. Deaver means by an inflammation of the peritoneum that the infection is of the type that invades the serosa. If that is what he means by peritonitis, then I hope we are comparatively a unit; that operations for that type of peritonitis are particularly fatal is known to all. The presence of pus in large or small quantities, with the peritoneum still retaining its gloss, though red and congested, means in this type that the peritoneal surface is not open for absorption of the products any more than an erythematous skin is open to infection. The skin may be congested and the peritoneum congested and still the epithelial and endothelial shingles be intact. If these endothelial cells are intact, I feel that the patient is going to get well, regardless of the quantity of pus in the peritoneal cavity.

There are some other questions that have come to my mind, and I intend to ask the opinion of Dr. Deaver on them, because I am not just satisfied as to what rôle they play. The first is the element of tension in an invaded area. We recognize in general surgery that infection is greatly lessened, the tension is relieved, that is, there is a subsidence of the manifestations of intoxication. Do we relieve all tension by opening the peritoneal cavity and allowing the pus to flow out? Yes, unless the pus is retained in circumscribed pockets. Infection under pressure produces rapid destruction of all tissue by the increased advantage of the biotic and toxic action of the sepsis on tissues depleted by the pressure. The immediate opening and drainage of pus from the peritoneal cavity lessens the liability of destruction of the endothelial cells—the shingles of protection against absorption. Is the drainage always sufficient without irrigation? For my practice I would say, "Yes." The next question is the type of the infection. Do we recognize in peritonitis certain types of infection? Yes. Many times when we open the peritoneal cavity for peritonitis—I mean from the appendix—whether infection occurs through the opening of the wall or through perforation is a matter of indifference if we have the virulent type of infection.

A final question: Is it possible to make a diagnosis of the pathologic conditions within the peritoneal cavity from the symptoms? That is the most vital question from a practical standpoint. I take the stand for myself; I take the stand for our profession; I take the stand for the people, that we can tell from the symptoms neither the extent of the pathologic changes within nor the tendency of these changes. When we assume to do this we put ourselves in the position of judges from the outside, as to whether the pathologic conditions in the peritoneal cavity are going favorably or unfavorably. The greater my experience with acute peritonitis and acute appendicitis, the more certain I am that I am unable to diagnosticate the type and degree from the symptoms and physical signs; the more certain I am that I can not say from the course of appendicitis in the first twenty-four or thirty-six hours, that it will not terminate in that virulent, fulminating appendicitis which every surgeon and practitioner dreads; the more certain I am that I can not say whether it is a staphylococcus, a streptococcus or a virulent type of the bacillus coli communis infection. Many years ago I believed that it was possible for me to say, "This is one type of infection; that is another," but now, with something like 1600 cases of appendicitis operated, I am convinced that it is impossible to say what the type is and what the termination.

When the peritoneal cavity is opened I believe that we can approximately tell from the appearance of the surfaces within, whether the patient will recover. If it is blistered and excoriated to an extensive degree, even with a small quantity of pus, the chances are that the patient will die, drainage or no drainage. While if the peritoneal gloss be retained, no matter what quantity of pus be present, the chances are that the patient will recover with simple drainage. Finally, I feel more strongly the position I took ten or twelve years ago, that all cases of appendicitis are dangerous to life, that in 98 per cent. of cases the infective material is confined within the appendix during the first twenty-four hours, that operative procedures instituted within that time give a mortality of less than 1 per cent., that the percentage of danger from the disease is enormously greater if interference be postponed beyond that period of time, and since my sacred and solemn duty to my patients compels me to treat them by the means which least jeopardizes their lives, therefore—that an operation should be performed within twenty-four hours after the first onset of the symptoms.

Dr. LaPlace's forceps are a matter of no small moment in the technic of enterorraphy. It exactly regulates the degree of inversion of the cutaneous edges of the bowel and gives a firm uniform surface, upon which the suture may be applied. It enables the surgeon to approximate lumens of varying size with an even division of spaces. It can be used for lateral as well as for end-to-end anastomoses. It enables one to control the relative position of the two mesenteric attachments, that is, they are not allowed to come directly opposite each other. When the work is completed the forceps are easily removed and the final stitch placed. Further, it gives assurance that too much of the bowel is not inverted and stenosis will not occur as a sequence of the suture.

Dr. Connell's able presentation of his very ingenious method of suture must attract the attention of every abdominal surgeon. It has in it so many elements that appeal to the thinker on intestinal approximation, and I have found in the use of the suture that his theoretical advantages are sustained in its technical application, as well as the security afforded by it. It gives an exact approximation of the serosa over the entire circumference of the bowel and particularly at the weakest point of all other methods of intestinal approximation, namely, the mesenteric attachment. When the suture is properly applied, and it should never be otherwise, the peritoneal coverings are brought into close contact so as to lessen the liability of leakage at the mesenteric attachment. The suture material is nowhere exposed on the peritoneal side and neither is the final knot. It does not require an additional opening in the bowel as does the Maunsell stitch. The degree of eversion of the edges can be controlled better than with any other, which is an important matter in this work.

The liability of leakage around this suture is very small on account of the manner in which the approximation is produced. The technic of its application is not difficult and I might add that there is no suture of the intestine that can be made without a careful consideration of this method. If suture is to be used at all, I believe that the Connell suture has advantages over any other with which I am conversant. It can be applied to the lateral as well as the end-to-end or the end-to-side. Dr. Connell deserves the sincere thanks of the profession for giving them this accurate method of intestinal approximation.

Dr. E. J. McKnight, Hartford, Conn.—Following in the line of the last speaker, I am a little surprised that nothing has been said about the blood count in cases of appendicitis. In many cases we have in this very positive knowledge. A child 6 years old was taken with vomiting and pain in the abdomen. The case was not considered serious, and when I saw it one week later, at 1 p. m., the vomiting had ceased, the pain had disappeared and there had been several operations of the bowels from salines. The abdomen was distended to some extent, muscles not rigid. There was a case in which I was entirely at sea and relied upon the blood count. There was found to be a leucocytosis of 38,000. I am positive that the methods were accurate. We determined on operating, and the operation was performed at 5 p. m. On opening the abdomen, foul-smelling pus flowed out and the appendix was found to be ruptured and gangrenous; the lower portion of the abdomen was bathed in pus and intestines were congested and red and covered with patches of exudate. The appendix was removed and the abdomen thoroughly flushed, being thoroughly washed out with salt solution, every point of the abdominal cavity being reached with a glass tube connected with an irrigator. The very slight adhesions that were forming were broken up gently and every part of the abdominal cavity was flushed. There had been a recent case of similar nature, in which a small portion at the back of the meso-colon was not reached for some unaccountable reason. This resulted in abscess, and led me to be more thorough in washing. I saw the patient two days after operation and supposed he would die. I received this morning a telegram from my assistant who said that to all appearances the boy was out of danger. Of course, it is too early to say that positively, but in spite of what has been said about not washing out the abdomen, I feel that the thorough flushing of that abdomen, the positive knowledge I possess that every portion of that cavity was thoroughly washed out, leads me to believe that the patient will recover. As regards continuous irrigation, I do not see how that will accomplish much, for after a short time the fluid may only reach a circumscribed space, adhesions will form and only a small portion of your abdominal cavity is flushed. I relate this case mainly to call attention to the positive information to be obtained from the blood count. Another case occurred in January, in which a young man had had repeated attacks since November, not severe, but which confined him to the house and made him an invalid. The operation in this case was performed when the parts were congested and the adhesions vascular, but there was no pus. On the second day the temperature rose to 100.5 and the next day to 103. I feared that we had infection. There was nothing to account for this. The blood count showed a leucocytosis of 8400. This was taken morning and night and remained the same; the temperature continued about 103 for three days. I feared an infection, but relied upon the blood count and waited. The temperature subsided and the patient made a complete recovery. It was due to an attack of grip. In that case if we had not had positive knowledge from the blood count, we should have been obliged to open the wound with the expectation of finding pus.

Dr. T. J. Maxwell, Keokuk, Iowa—I wish to give my voice for irrigation in general peritonitis and septic peritonitis. I read a paper before the Iowa State Society, four years ago, and one before the American Medical Association, at Denver, three years ago, recommending that plan by introducing a tube under the stomach, and another tube—a discharge tube—from the pelvis, and irrigated continually until all the tendencies to rise of temperature had ceased. I have one case to relate, which I think was saved by that method. This case I operated upon for tumor; the tumor burst during anesthesia, discharging the contents through the abdomen. After three days the temperature began to rise, vomiting commenced, the pulse rose to 130, all symptoms of septicemia were present and I instituted irrigation of normal salt solution, and repeated it every four or five hours for three or four days. With the first irrigation the temperature came down, within an hour, from 104.5 to nearly normal, and the temperature was not allowed to rise above 100 F. after that. The appetite returned, vomiting ceased, the bowels were moved and the patient recovered. The general, thorough irrigation of the abdomen is indicated.

Dr. E. W. Andrews, Chicago—The papers of Drs. Deaver, LaPlace and Connell belong to the type of real contributions to surgery and we are very much indebted to them. Now, this question of irrigation. Dr. Murphy has told us that there was the element of the type of the infection. True enough, but there is one other element, which perhaps he might have added, the element of the length of time of the infection. When we are brought to face this question, why not drain or wash out the peritoneal cavity? Let us see the conditions in this one disease of appendicitis, leaving out of the question the disease we heard discussed yesterday. We have a pus focus on one lower side of the abdominal cavity. We drain. A quantity of pus runs out, fetid or quite clear. How do we know what the conditions are when we find free pus in the intestines without a restraining wall? Can any man say that a collection of pus has invaded all parts of the intestine and smeared the surface of every part of the intestines in that patient? Many times around this area of pus is another zone of sero-pus and serum; I have seen that pus first flows as a milky serum, and finally clear serum flows from a wider zone. If that is true—and certainly on the table we have all demonstrated in these cases where there is no wall—what shall we say about the propriety of flushing out the abdominal cavity? Only this, that as sure as this patient recovers it is because there are one hundred square inches of peritoneal surface which have entirely escaped infection, perhaps entirely escaped the contact with fluid. Pus or extravasated matter may lie in contact with the peritoneum a few hours and not cause fatal peritonitis. We see it in gastric ulcers, where we see operations in extravasation cure 80 per cent. of cases in the first operated upon in the first twenty-four hours and 20 per cent. of the cases operated upon later.

What of the possibilities of recovery after leakage into the peritoneum? All cases which recover in so-called septic, generalized peritonitis are cases in which at least a part of the peritoneal cavity has escaped contact and every case in which all surfaces were inflamed dies. What is the bearing of that on the question of flushing out? We fill the peritoneal cavity with water, and by that means disseminate the infection to every remote part of its surface. I say no. I can cite as many cases on the other side as Dr. McKnight has cited here—recovery under simple drainage the moment the pressure is relieved. Out flows the pus and in spite of the demonstrations of Dr. Clark, the current is towards the drain. I have had many more recoveries since I have used the Fowler position; I have used it in four or five cases since the first of January, after operations in which pus was present without adhesions. Under that treatment recoveries have taken place in my practice in a way totally unexpected to me, and in which I have never seen before under any form of treatment.

Dr. Connell's paper has interested me greatly. I see that the paper deals apologetically with the question of perforation of the mucosa. When you scrutinize this question, think of what it means. Does not the world-wide known device, the Murphy button, do the same thing? What do we have there? We have the button in the mucosa, approximating two serous surfaces. Take, for example, what to my mind is the next best suture in enterorraphy—the Maunsell operation. It is a very satisfactory operation, but one in which absolutely the suture passes cleanly through from serosa to mucosa. The Connell suture passes from one side to another, but it does not leave any portion, not even the final knot outside of the peritoneal cavity. Having done both operations a number of times, I have noticed this distinct difference between the Connell final stitch and the Maunsell—with the latter the stitches are distinctly seen after the knots are tied. At every stitch you see a little danger point, the crossing of the silk thread; in the Connell stitch the enfolding of the serosa hides the stitch. Dr. Connell's paper did not describe his operation, and, therefore, to those who are not familiar with it it is exceedingly unsatisfactory. The Connell stitch has this merit, which it has in common with all the best of modern gastric and intestinal work, namely, it is a continuous stitch. I believe the continuous stitch is the secret of success in suture work in the bowels and intestines; more than that, it has precisely the merit of the Murphy button, in that it is practically a clamp. When the Connell suture is put back and forth, through and through, holding these inverted edges together, it is a clamp. Dr. Connell has kindly reported five of my cases. I had his assistance in the first one or two. I had also been taught to do it upon the gloved finger and upon the dog.

Dr. M. L. Harris, Chicago—I wish to say a few words on the point brought out by Dr. Murphy, namely, are we able to diagnose the condition within the abdomen? I say most emphatically that we are not able to diagnose the condition and that many times it is impossible for us to form any conception of the true condition to be found, either within the appendix or within the peritoneum by our present means and methods of diagnosis. The question of leucocytosis, brought out by Dr. McKnight, is unquestionably one of value, but in the cases where we need it most it fails us and is of little diagnostic importance. In the fulminating cases we find that the system, for some reason, is so overwhelmed by the intoxication that leucocytosis absolutely fails. There is no increase in the number of leucocytes, in fact, they may even be diminished. Again, in many of the mild cases which are apparently progressing favorably, so favorably that we may be in doubt as to the best course to pursue, there may be no leucocytosis, still we may open the abdomen and find a large appendix distended with pus on the verge of rupturing, or an ulcer which has extended to the peritoneal surface and would unquestionably perforate in a few hours and produce acute infective peritonitis. In these cases leucocytosis fails us; it has not yet taken place, and it is impossible for any one to determine these conditions before the abdomen is opened. As with Dr. Murphy, I have had three such cases recently. Two of the cases were of a mild type, in which perforation was imminent and in which there was scarcely a symptom, except the mild tenderness to indicate that the patient had an appendicitis. Still, perforation would unquestionably have taken place within a few hours and acute infective peritonitis would have been precipitated. It is impossible to determine before opening the abdomen in many of these cases the conditions to be found in the appendix or peritoneum. When one has operated on fifty cases of appendicitis he thinks he knows something about it, when he has operated one hundred cases he doubts, but when he numbers them by several hundreds he knows that he knows little or nothing about the conditions which he will find when he operates. The point then, which we would make is that we can come to no other conclusion except the fact that, as soon as a patient presents symptoms of appendicitis, the safest course is that of immediate operation. We do not question for an instant, nor does any surgeon, that the large proportion of cases of appendicitis would recover from the attack without an operation, but it is those who do not recover that we are trying to save, and those who did not recover without operation if they had come to the surgeon and were operated early, ninety-five out of one hundred would recover.

Dr. James E. Moore, Minneapolis—I differ from my esteemed friends, Drs. Deaver, Murphy and Harris. I agree with Dr. Deaver that when the patients are under his care and in his hospital that they ought to be operated upon just as soon as the diagnosis is made; but I maintain, as a teacher of students and as a practitioner of surgery, who is to-day talking to many general practitioners, that the doctrine that every case with a diagnosis of appendicitis must be operated at once is pernicious and dangerous. If that doctrine is to be taught to our students, laid down as strongly as Dr. Deaver always does lay down everything, he will feel it his imperative duty when he has a patient out in the backwoods to advise operation when he has no skilled surgeon at hand to operate; the consequence will be that country graveyards will be filled with cases of appendicitis that might have recovered had they been let alone. We are all extremists in some things. Dr. Deaver claims to be one, and I understand he prides himself on being an extremist in this matter; but if you will stop to think, you will agree with me that we do not look for the best of anything from extremists. We must have these extremists. They are useful to point out to us that happy middle ground that is always the safest. We can not lay down hard and fast rules of anything in surgery where human life is involved. I maintain, therefore, that these men who assume this extreme position are teaching a dangerous doctrine. You will notice that they are men whose experiences are in the hospitals in the large cities. To those of us who are in cities like Minneapolis, where there are only two hundred thousand people, things are looked upon differently. In the country you are held responsible individually for these things, and you must recognize the right of your patrons to an opinion. You can not lay down hard and fast rules; you must give certain medicines or give the knife. And, while I admit with Dr. Harris and others that you can not tell what is inside of the abdomen, I maintain that if every case is operated on under all conditions and by every man who has a diploma, the percentage will run greatly above 17 per cent., which after all is not so very much lower than the "let-alone" treatment. With reference to the removal of the appendix in every case operated upon, I would draw that same line, making it depend upon the experience of the operator and the environment. I am in the habit of telling my students, "When you begin your work you will probably have to make an opening there big enough to get your hands and feet in to find anything you are after. If you see the appendix and feel it, take it out, but don't go pawing around for it." On the other hand, I am sure that most experienced surgeons will remove the appendix in the vast majority of cases. With reference to the blood count. I was very enthusiastic at first, and I had my internes working on it constantly, but I have got to the point where I only want it in certain few cases, but ordinarily it is a disturbing element. It does not give me positive information when I need it most, and many times it gives me information supposed to be positive that is misleading. In some cases with great pockets of pus we do not get sufficient leucocytosis to demand operation. Many times we get a marked leucocytosis with a simple catarrhal appendicitis.

Dr. Robert T. Morris, New York—It seems to me that we ought to adjudicate the term "extremist." It is a matter of the application of the word. When a visitor in my barn, looking over my Jersey stock, drops a match in the hayseed on the floor and the match is still burning, I am an extremist on the subject of putting out that match and I do not care who calls me one. It is a question of understanding the subject with which we have to deal. With appendicitis we are dealing with an infection; no one can tell the limits of it any more than you can tell the limits of the match in the hay on my barn floor. It may go out. I have seen them go out before I could get to them, and I have been saved the trouble of operating on that match. I agree with Dr. Moore's position on most of the points, but we must make our position more clear by saying that we are to teach our students principles, just as the law class is taught principles. Can we say to the law class: "You men, half of you, are not to be taught principles in law because you will go out and get your clients in trouble. Your clients are going to lose estates and this widow is going to lose all that belongs to her. You are going to get your clients into trouble if I teach you principles!" The law class is to-day taught principles and the medical class is to-day taught principles just as the law class, and we are to explain the reasons why cases of appendicitis are to be operated on as soon as a diagnosis is properly made. I would emphasize one point particularly. I assume the diagnosis is made by men who are qualified to make it and that it is properly made, and then, it seems to me, our line of action can safely be left to the judgment of men who are graduating from the kind of schools in medicine that we believe in to-day.

Another point—Dr. McKnight's leucocytes. This is a matter of much collateral interest—the blood count—but it is not one of determining interest. I will not go over the ground that Dr. Harris covered, except briefly to state that all of his points were those of a practical man, and I agree with all he made. Many of our most violent cases have not had time to develop a leucocytosis. When a concretion is about to perforate the wall of the appendix, we have a marked spasm of the muscularis of the entire bowel, a definite progressive appendicitis, and yet little to stimulate development of the leucocytes, a development of leucocytes which would determine the question as to whether we are to operate or not. We must determine that point from our other sources of knowledge and must look upon the blood count as a scientific, valuable addition to our knowledge of the phenomena occurring in the course of these cases. This keeps me still on the point of leucocytes, and Dr. Deaver's and Dr. LaPlace's papers both bear on this point. It seems to me to-day that our whole plan of action in the treatment of appendicitis consists in forming a strong alliance with the leucocytes. We are dependent upon leucocytes to-day for our help in trouble. Anything which shocks the patient interferes with his development of phagocytes. The thing for us to learn to do in the treatment of appendicitis, with peritonitis—grave septic complications—is to let the patient alone as much as possible when operating and allow him to develop his phagocytes. If we introduce continuous irrigation, I am afraid that we are taking some of that patient's strength. If we use gauze packing extensively, I am afraid we are taking some of the strength that is required for manufacturing the leucocytes. If we make multiple and extensive incisions, with wide flushing of the peritoneal cavity, we are using up the strength that the patient requires for manufacturing leucocytes. Leave him alone as much as possible; allow him to manufacture his phagocytes. That is the line of treatment today; that is the line of treatment that is to give us our best statistics. It certainly has in the hands of some men. It certainly is a matter to be determined, after all, by statistics. We do not care for this or that man's theory, so long as his statistics show his experiences are right. The matter of blood washing is more important than the matter of peritoneal washing. I believe, in short incisions, rapid washing out of the chief toxin-collection of fluid with hydrogen dioxid washing, without gauze packing, without extensive drainage, leaving some pus often, but giving exit to the chief toxin-bearing collection, and letting the leucocytes manage the rest. Clark's position was the opposite of Fowler's, yet Clark's statistics were the best we had up to the time of the presentation of Fowler's paper. Clark placed the patients with hips up and allowed them to drain through the diaphragm. Fowler drains the other way, but we know that both plans have their good points and have given remarkably good data. Back to the point of blood washing. These patients are loaded with toxins; their sympathetic ganglia are poisoned with toxins circulating in the blood. If we distend the blood-circulating channels with salt solution, fifteen hundred cubic centimeters at a time of physiologic salt solution, many of these patients who are going down, hour by hour, a little worse, worse to-night and worse to-morrow, and to die on the following day, will turn instantly for the better in fifteen minutes after you have distended their blood vessels with physiologic solution, because the toxins are being eliminated by the emunctories. The dull eye and the thirst change, not to-morrow, but in ten minutes after you have done this, and I do not know why it is forgotten by so many who know so well the points in washing out the blood, by the method of injecting salt solution into any available vein; it excites the emunctories to rapid work and causes the elimination of toxins circulating in the blood.

Dr. F. D. Smythe, Memphis—What should concern us most as surgeons should be the consideration of those principles that will save the greatest number of patients suffering from this disease—appendicitis. I do not think that we should be handicapped by the consideration of a procedure that would cause additional delay in according these patients the proper treatment, which treatment is surgical if seen at the outset by a surgeon. No one questions that the ideal treatment in all cases of appendicitis would be immediate operation after diagnosis, if made by a competent man. If this practice could be carried out we would see none of those conditions described, such as peritonitis, extensive suppuration with perforation of the intestines, resulting fistulæ, etc. It is an operation unattended with danger if performed by a man who knows what asepsis and careful technique are, and the resulting mortality could not and would not exist. We can not be held responsible for those cases which are brought to us suffering from septic peritonitis—operation here does no good; they will die with or without an operation when permitted to go this far. Fulminating cases are, as a rule, not benefited by late operation. Here operation must be performed at the very outset if we expect to accomplish anything by it. The successful treatment of appendicitis depends upon its early recognition and prompt surgical intervention. One point with reference to drainage. I am satisfied that a few cases of appendicitis have been saved, with suppuration involving a large area in the right lower quadrant, by making a counter opening in the loin. It is indicated in cases where the appendix points upward, in order to establish more perfect drainage a large rubber tube is drawn through, maintaining thorough drainage; this would not be attained if gauze packing or the mere insertion of the tube were depended upon. This procedure has served me well on all occasions where its employment was indicated.

Dr. John B. Deaver, Philadelphia, in closing—I am delighted with this discussion. It is the best on appendicitis that I have ever heard. I feel that if I should sit down and say nothing more, that this fifty-second session—and especially the surgical section—would go down in history. I feel that I have consumed too much time. Dr. Steele, Chicago, said he was not fortunate in making postmortem examinations. What is wrong in opening your wound and saying nothing to the members of the family? That is part of the operation. Dr. Murphy, Chicago, raises the question of peritonitis where we have an eroded peritoneum reddened and excoriated. It is beyond the aid of mortal man to be of any assistance. Therefore, always at the operating table I class these cases among the fatalities at the time of the operation. I believe much is accomplished in the way of relief from tension. Another question Dr. Murphy asked me was in regard to cases where the pus was creamy yellow—I would call these cases general infective peritonitis. These invariably get well. I have a number that my house doctor in the German Hospital operated on during that stage and all have gotten well. I have never lost one as yet when I have gotten them early. Dr. Murphy also remarks as to the type of infection. That is most important. It is not necessary for me to go into an examination of infection by the colon bacillus, staphylococcus, etc. With Dr. Murphy, too, I am sure no one can tell what is going on inside of the belly cavity and these fulminating cases of appendicitis mislead us if we delay the operation. The only sign, if I would call attention to it at all, that makes me fearful of the condition inside of the belly cavity, is pronounced general rigidity of the belly wall. When I see a patient with the belly walls like that table, on which I can not make any impression, in perfect health, has a normal temperature, but an increased pulse rate, with a history of sudden onset and abdominal pain, I am always apprehensive of that result. Anesthetize those patients, and, if under the effects of ether that muscular rigidity does not entirely disappear, that suffices oftentimes to bespeak the condition we will meet with inside of the belly cavity.

In reply to Dr. McKnight, who raises the question of blood count. There is much to be said on the blood count. I do not believe delay should be permitted on account of it. I believe that we should operate, then make the blood count, if time is of any question. I believe, too, in the presence of gangrene, that leucocytosis is dangerous as a guide, because it is unreliable. Irrigation in general peritonitis, if it is the type that Dr. Murphy referred to, does not mean anything, and, with Dr. Morris, I believe that the less you subject the patients to the resisting power of additional attacks, the better likelihood of the outcome.

The question of Fowler's position—I have used it ever since Dr. Fowler described it and with happy results.

To my friend, Dr. Moore, I will say that we have to be careful in the handling of students, but, at the same time, truth is mighty and must prevail. The teacher that stands before a body of young men, who are going out to meet the responsibilities of a doctor's life, and teaches them the doctrine that Dr. Moore brought forth here, will be the means of erecting many an appendiceal tombstone. Give us teachers who have the courage of their convictions. I feel very strongly upon this point, for I feel that it is absolutely wrong to appear in any but the proper guise. Therefore, I am firmly of the opinion that an early operation is the *sine qua non*.

Success of Sclavo's Anti-Anthrax Serum.—The *Gazetta degli Ospedali* states that eight persons were taken sick after eating meat from a steer that had died from anthrax. All promptly recovered after treatment by injections of Sclavo's anti-anthrax serum at the Siena University Clinic. Fourteen other persons in a similar epidemic at Santa Croce were cured by the same means, and others at Castel and Colle Val. Alberto describes in detail in the issue for September 1, another severe case cured by the serum six months after the date of manufacture. Sclavo offers his serum free of charge to physicians on request.

MODERN ASPECTS OF CONGENITAL OSSEOUS MALFORMATIONS.*

CARL BECK, M.D.

NEW YORK CITY.

The most frequent abnormality of the upper extremity is polydactylism. If there is but a rudimentary finger attached loosely by a pedicle which does not contain any phalanges at all, removal is simple.

In Case 1, illustrating a boy of four months, the supernumerary digit, as shown by the skiagraph, contained no bone-tissue. (Fig. 1.) Removal was naturally easy. In the same case there was a partial fusion of the third and fourth metacarpal bones, a condition which would not have been diagnosed without the Roentgen rays.

Case 2 represents the more complicated type of true supernumerary digits articulating with each other. There was also a supernumerary digit attached to the little toe. (Fig. 2.)

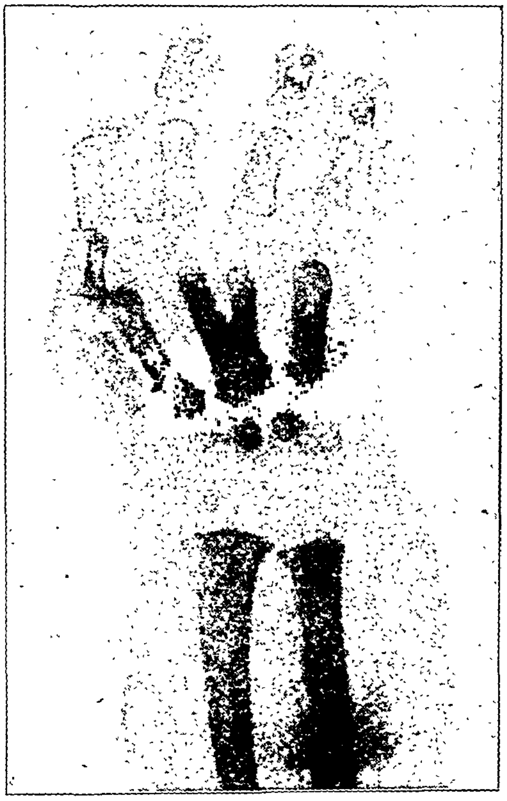

Fig. 1.—Non-osseous supernumerary digit and synostosis of third and fourth metacarpus.

Case 3 shows a true supernumerary phalanx attached to the thumb and articulating with the first metacarpal bone. It is nearly as large as the normal phalanx and possesses a well-developed nail. It is held in abduction.

Case 4 illustrates the complicated type of syndactylism in a boy of four months. The parents are in good health and emigrated from Hungary eight years ago. The second, third and fourth digits appear to be fused together, each one of them, however, possessing its own nail. The skiagraph shows fusion of the first and second phalanges of the third and fourth digits, while their third phalanges are free. The little finger is more developed than the slightly deformed thumb. The carpus is not ossified yet, and shows no shadow therefore. Under the guidance of the Roentgen rays it was easy to divide the phalanges. The middle finger was protected by a large longitudinal flap taken from the dorsum manus. The other two fingers were covered by their own integument, longitudinal flaps being formed from the palmar surface for the second finger, and another from the dorsal aspect of the fourth. The final result is good.

In syndactylism the Roentgen rays always prove whether its nature is cutaneous or fibrous or osseous.

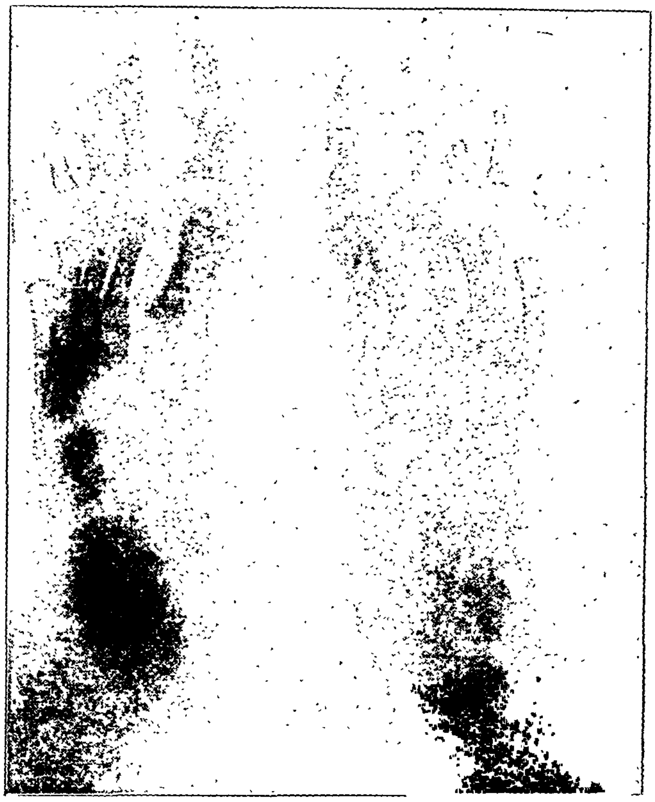

Fig. 2.—Supernumerary phalanx of the left little toe.

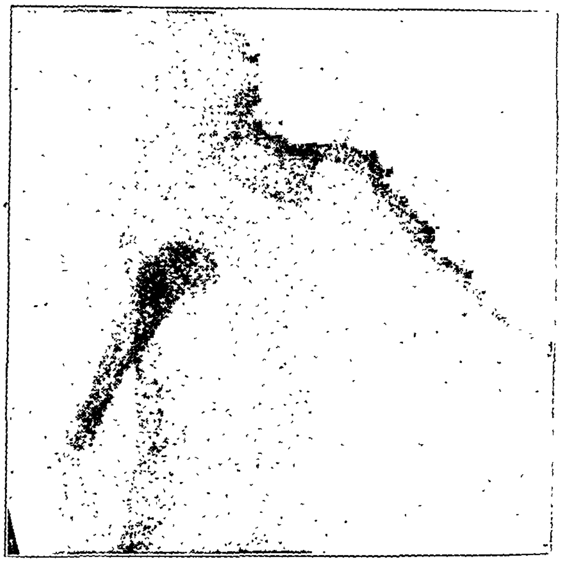

Fig. 3.—Congenital fracture of radius and ulna.

Case 5 shows congenital exostosis in the second phalanx of the index finger in a boy who was born in Germany nine years ago. The family history showed nothing abnormal. The Roentgen rays demonstrated the benign character of the osseous growth clearly. In view of the presence of functional disturbance removal with the chisel was undertaken.

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* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Diseases of Children, and approved for publication by the Executive Committee of the Section: Drs. H. E. Tuley, Edwin Rosenthal and Samuel W. Kelley.

Congenital deficiencies are naturally much less amenable to corrections. But that even in desperate cases of this kind surgery is not without resources is made evident by the transplantation of a toe to the hand, successfully undertaken by von Eiselsberg.

It seems to me that this special branch of surgery is too much regarded as a stepchild. Considering that in the lower animal, as long as in the embryonic stage, regeneration of large portions of the head and trunk are possible, it should be expected that the new-born child—in a smaller proportion, of course—also offers more changes for regeneration than the adult. If the germinal layer is only present, further development of tissue can be looked for. If a part of a phalanx is properly severed, its individualization is a matter of great probability, provided the bridge remaining has preserved sufficient vascularity for nutrition, that there is no overextension of the flap and thorough aseptic precautions are taken.

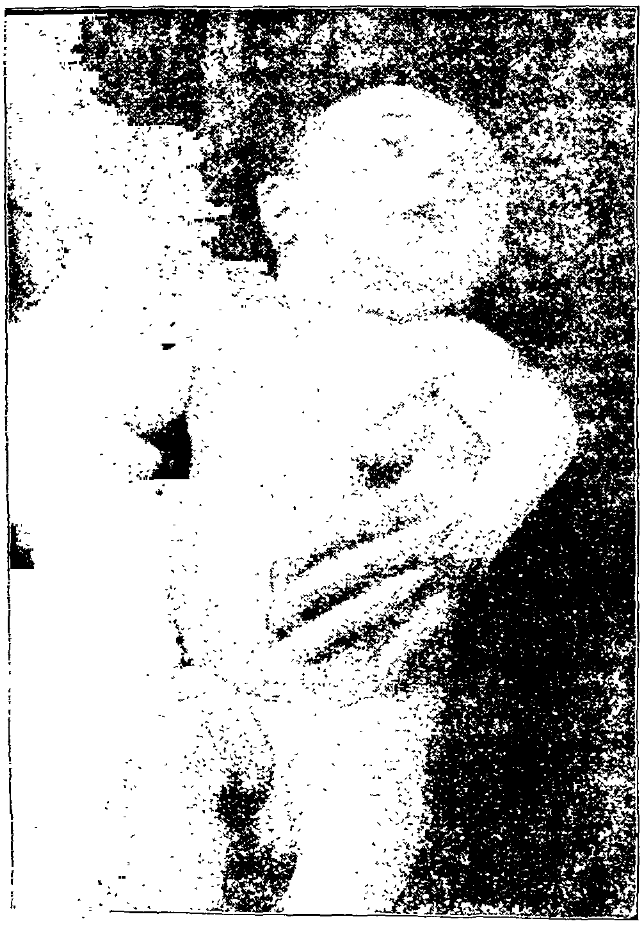

Fig. 4.—Congenital absence of the radius and ulna.

Fortunately, the Roentgen rays are predestined to give an impetus for a new operative strategy in this much neglected field. Thus, in a case of brachydactylism, combined with electrodactylism, the Roentgen rays proved to be of great value. In Case 6, that of a boy three months, there were five rudimentary fingers. The skiagraph showed the presence of one phalanx of the thumb and of two phalanges each of the other fingers. The child was the first born of German parents, who emigrated five years ago. The mother is healthy. The father was suffering from tubercular knee at the time of the birth of the child, and died from general tuberculosis a year afterward.

Under the guidance of the Roentgen rays I performed a flap operation on the principles set forth in Case 4, between the first and second finger-rudiment. Thus a fairly good thumb was created. The case, however, offers two more points of interest. In the first place there was congenital fracture of the ulna and radius at their lower third. (Fig. 3.) The forearm could be bent easily at the seat of the fractures. After wiring the fragments union became perfect. There was, furthermore, congenital constriction at the region of the surgical neck of the humerus, where a deep furrow encircled the whole circumference of the arm. Palpation was unable to detect any soft tissues between the integument and bone. An exploratory incision revealed the presence of the fragments of the

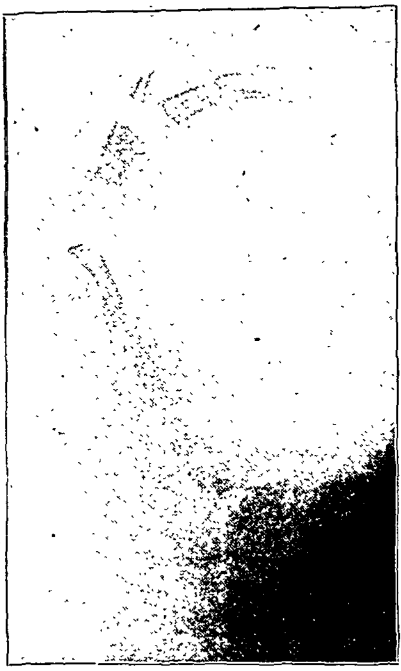

Fig. 5.—Skiagraph of Fig. 4.

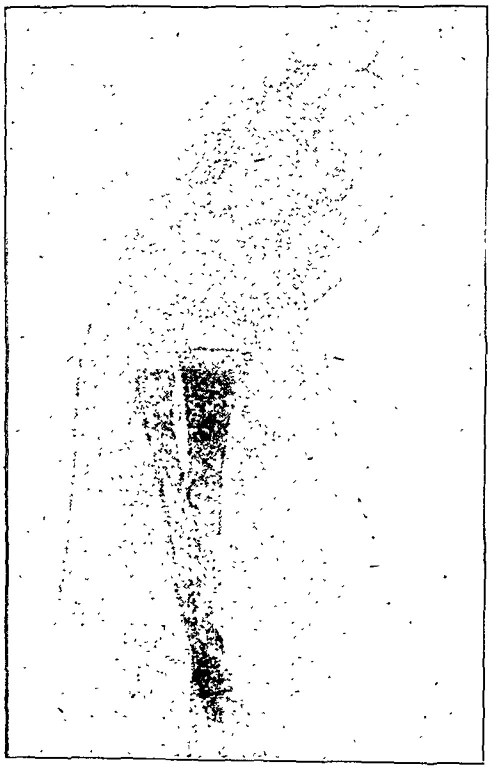

Fig. 6.—Congenital absence of metacarpi and phalanges of the second, third and fourth fingers.

biceps, triceps and deltoid muscles. Their edges were refreshed and united with catgut. For relaxation, two deep wire sutures were introduced from without. The result is fair according to the last report, fourteen months after the operation.

It may be added that the otherwise well-developed right hand shows a moderately deep constricting furrow near the metacarpophalangeal junction of the middle finger, which did not seem to demand surgical interference.

Case 7 shows congenital club hand associated with absence of the radius and ulna. That there are only three fingers is shown by the photograph (Fig. 4) and that but three metacarpal bones are present becomes evident by the skiagraph. (Fig. 5.) The patient is a boy of six weeks, born in New York. The family history is good. The parents emigrated from Italy two years ago. The father is 66 and the mother 41 years old. Both are in good health. There are three previous children, all of whom are well. The left arm of the boy is normal, with the exception of the thumb, which is partially ectrodactylic, like the thumb reproduced in Fig. 3. The muscles do not show any atrophy. Extension and flexion of the wrist was possible to a moderate extent.

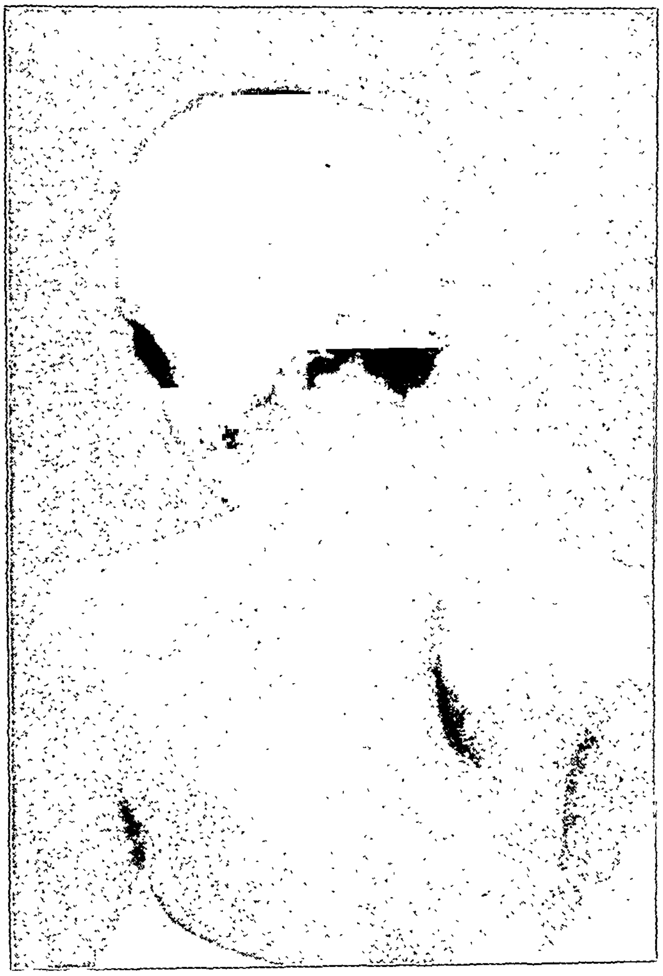

Fig. 7.—Congenital scapular asymmetry.

I attempted to improve this deplorable condition by creating a thumb after the principles carried out in Case 6. For this purpose a dorsal incision was made down to the first metacarpal bone, which I divided longitudinally, thus making a kind of bifurcation. The phalangeal end was severed entirely, but the carpal end, after being longitudinally fractured, was left in slight connection with the metacarpal bone. Thus a new bone was obtained, which was surrounded by dorsal as well as palmar flaps. How far this new fourth finger can be utilized can not yet be known, the child still being under treatment. The skiagraph shows its position. The treatment of the club hand by osteotomy and reversion of the abundant skin to the opposite side will be attempted later on.

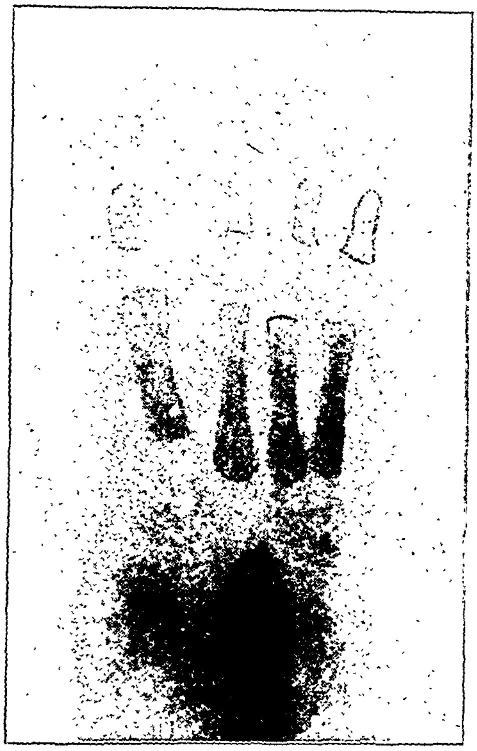

Fig. 8.—Congenital absence of one metatarsus and corresponding phalanges.

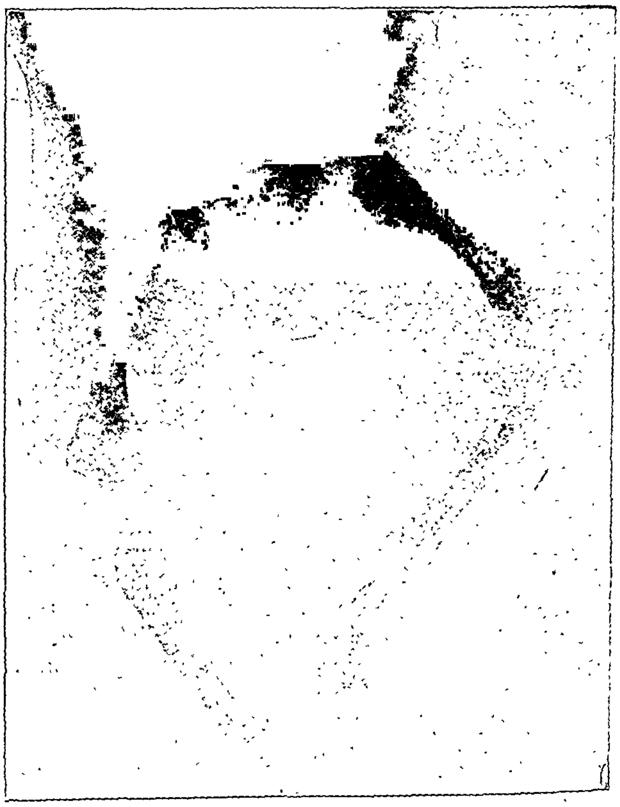

Fig. 9.—Congenital shortening of the right femur.

Case 8 represents a boy of three weeks, born from healthy German parents, who shows neither carpal nor metacarpal bones. There are three phalanges at the ulnar and two at the radial side, the latter undoubtedly representing the thumb. (Fig. 6.)

Case 9, which was observed before the discovery of the Roentgen rays, may be added in view of its rarity. It represents congenital absence of the arms and forearms. The clavicle as well as the scapulæ were normally built, but of smaller size. Neither the glenoid cavities nor the coracoid processes could be made out well. Instead of the round shape of the shoulder an angular prominence is noted. Adjoining the ribs a small bone could be felt below them, which might have indicated the rudimentary representations of humerus and antibrachial bones, but their nature could not be clearly defined. To this the rudimentary hand was attached, which contained five fairly developed fingers, provided with nails. The metacarpal bones could not be made out distinctly.

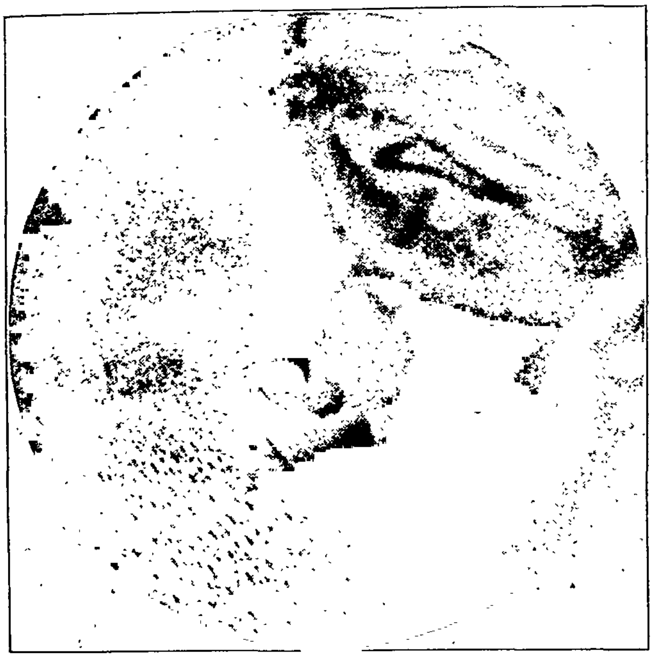

Fig. 10.—Congenital hypertrophy of toes.

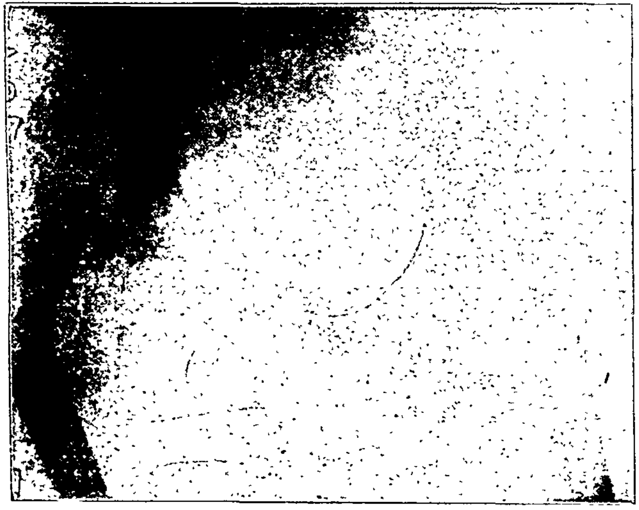

Fig. 11.—Congenital dislocation of both hips.

The patient, a boy, born in New York, was ten months old when the photograph was taken. The parents emigrated from Germany fifteen years before the birth of the child. Both are fairly well, but poorly nourished. One sister died from meningeal tuberculosis. Two brothers and one sister are alive and healthy. The patient died from dysentery when a year old.

Case 10 shows congenital scapular asymmetry in a girl of 11 years. (Fig. 7.)

Case 11 (Fig. 8) shows the presence of four metatarsi and their corresponding phalanges only, in a girl of seven weeks. The family history revealed nothing abnormal. There is no functional disturbance.

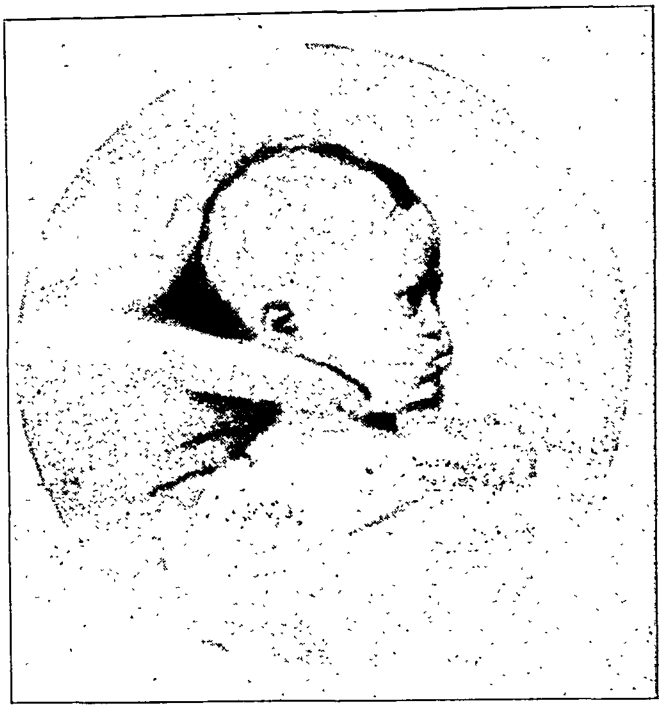

Fig. 12.—Congenital absence of nasal bones and insufficient development of nasal processes of supra-maxilla.

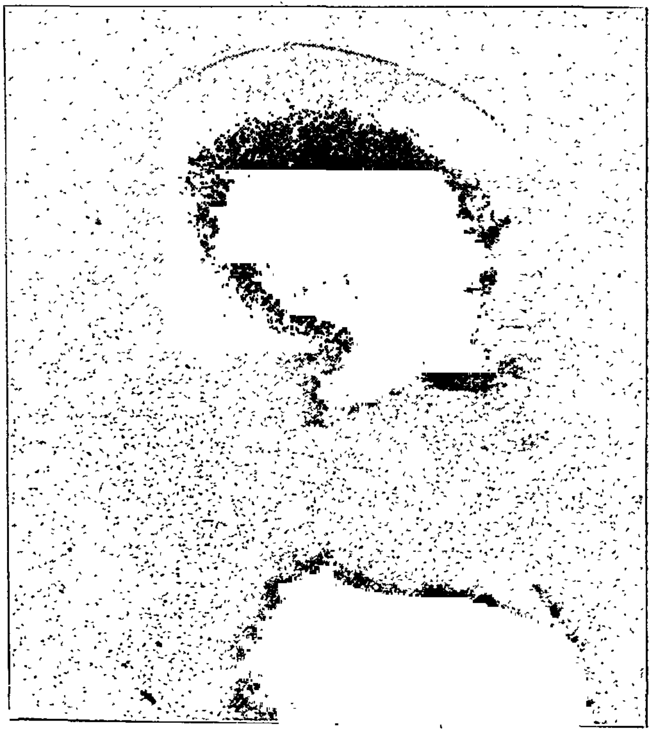

Fig. 13.—Skiagraph of Fig. 12.

Case 12 (Fig. 9) represents the lower extremities of a boy of three weeks. The left extremity is normal, while the right one shows shortening of the femur to the extent of an inch. There is no muscular atrophy. Whether intrauterine fracture of the femur was the cause of the shortening could not be elicited. From the study of the skiagraph it seems to me to be improbable. Shortening of the healthy femur for the purpose of equalization was considered. The degree of functional disturbance can, of course, not be estimated yet.

Case 13 shows congenital hypertrophy of all toes, especially of the second, in a boy of four months. They appear very thick and puffy like in elephantiasis, but the skiagraphs show normal structures. (Fig. 10.)

Case 14 shows congenital dislocation of both hips in a girl of 9 years. The cartilaginous epiphyses of the femurs are dislocated and the right femoral neck shows extraordinary bending. (Fig. 11.)

Case 15 represents congenital absence of nasal bones and insufficient development of nasal processes of the superior maxilla in a boy of two months. The infant is poorly nourished. The parents came from Russia five years ago and are well. There are four healthy children besides. (Figs. 12 and 13.)

It may be noticed that none of these deformed children were born of American parents and that heredity could not be made responsible in any of them as an etiological factor.

SOME SUGGESTIONS REGARDING A DEPARTMENT OF SCHOOL HYGIENE.*

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Definition.—From Dr. William H. Burnham, professor of school hygiene at Clark University School for Teachers, I have received this very good general definition of school hygiene. "School hygiene has to do with the conditions which favor the normal healthy development of children, so far as determined by school environment—school sanitation—and school programs, sequence of studies, text-books, and methods of study and instruction—hygiene of instruction."

Rationale.—Quoting from a former paper, I will again cite the fact that those nations which have exercised a powerful and elevating influence have been and are those which have exercised a care for the health of their citizens. Within fifty years indisputable evidence has induced nation after nation to recognize the value of sanitary science as the preserver of national health and wealth, as well as elemental to military success.

In a democracy self-preservation demands an educated citizenship. This underlying principle allows the state to say to the prospective citizen: "You shall, for an adequate length of time, be placed under such instruction as will make of you an honest, intelligent and useful citizen." Anything short of this will not insure the stability of the state. An elemental condition of useful citizenship, however, is a fair degree of physical health.

Moreover, there are certain unsurrendered rights of the citizen. Among these is the right to as fair a degree of health as his ancestors, and his right and moral duty to transmit to his offspring as good or better health than he himself enjoyed.

Hence, it is both the interest and the duty of the state to insist, when it places the individual under formative educational processes, that the physical basis in the educational structure be adequately and properly laid. For the most part the state has not assumed to dictate methods to the educator, simply holding him responsible for results. Both opinion and fact testify that the desired improvement in health from grade to grade has not been attained. In America this is the more strikingly true of the children of the cities. These rapidly built wildernesses of incongruous construction express little evidence of any desire to protect and foster child life. Their dark, noisome alleys and tenements contain millions of the miserable offspring of ignorant foreigners—poorly born, poorly housed, fed and clothed, with crooked spines, misshapen skulls and pathological eyes or ears, with little in their environment to produce self-respecting, self-supporting citizens, but with many conditions which tend to convert them into a dependent class.

To thousands of acres of such slumdom, public education alone, in any large sense, stretches out the reclaiming hand. Upon it is thrown the responsibility of converting these children into people who are physically able to compete with the children of protected labor and capital. Either this must be done or we must prepare for a steady increase in the dependent classes. The proposition is a simple one. Shall we put sufficient money into the schools to enable them to produce self-supporting citizens, and then hold them strictly accountable for results, or shall we half support them, paying little attention to the health of the children, and later on spend much larger sums of money for the construction and maintenance of hospitals, dispensaries, police stations, saloons, reform schools, workhouses, etc.?

Fortunately, public sentiment has become so favorable to better school sanitation that even now this can be made an issue in a school election. Not only is this so, but the school official who disregards his pledges in this matter can easily be defeated in a subsequent election. Physicians should combine with good organizations to secure the defeat of all such officials. It is especially appropriate that the city physicians use their combined influence with all civic organizations in this matter, for they, more than any other class of men, are forced to carry the steadily increasing burden of indigency. At the same time they understand better than does any other class of men its causes and appreciate more fully its large extent. Of all men, they realize most keenly how impossible it is for the homes of thousands of these children to evolve an effective type of citizenship.

Content.—Leading authorities place the following within the province of school hygiene:

School Diseases: Those of the respiratory tract, of the spine, of the nervous system, and of the special senses; general infectious diseases; the eruptive fevers.

Hygiene of Instruction: General; school age; amount of study; home study; arrangement of work; number of sessions per day; discipline; punishments; public examinations; number of pupils to a teacher; regularity of attendance; courses of study; individual branches—their comparative effect on health.

Personal Hygiene of Pupils: Food; clothing; sleep; exercise; bathing.

Physical Education: General; history; literature; as a department of science; as a department of hygiene; as a pedagogic discipline; as a practical art.

School Grounds: Soil; area; dimensions; surfaces; planting; school gardens; play grounds.

Buildings: Placing in grounds; foundations; basements; materials; general dimensions, as affecting school-room construction; heating and ventilating; lighting.

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* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Diseases of Children, and approved for publication by the Executive Committee of the Section: Drs. H. E. Tuley, Edwin Rosenthal and Samuel W. Kelley.

School Rooms: Dimensions; shape; furniture and its placing; floors; blackboards; colors; lighting; heating and ventilating; cloak rooms; supervision of conditions.

Furniture: Adaptability; cardinal points in construction; supervision.

Ventilation: Introduction of good systems; strict supervision of the same.

Heating: Different methods; temperature records; atmospheres; supervision.

Cleaning: School dust; methods and frequency of cleaning; supervision.

Sewerage: Systems; ventilation; supervision of closets, urinals, etc.

Since many of these phases of the subject will be discussed in the papers to be read, this paper will content itself with the mere mention of these important phases of school hygiene.

Introduction.—This may be effected in several different ways.

1. Upon the recommendation of the superintendent of instruction the board of education may consider the matter and arrange for a department. This presupposes a progressive superintendent, backed by an unusually intelligent and progressive board of education. This combination is rather unusual. Where it exists, however, the superintendent and board should feel that they have the moral and political support of the profession, as well as its assistance and counsel. A strong committee from the leading medical society can render services of great value in this connection. The factors most affecting the success or failure of this plan are the school board, the superintendent of instruction and the teaching force. Hence a few comments concerning these will be in place.

During the past six years we have attempted to introduce a department of hygiene into the Cleveland schools, following this plan, and the result is still doubtful. Here the federal-plan law is supposed to dissociate the department of instruction from the distinctively business department and to take the former out of local politics. Perhaps it accomplishes this, year for year, in a larger degree than is the case under the usual forms of school board organization. Notwithstanding, however, the earnest efforts and yearly recommendation of our superintendent, Mr. L. H. Jones, it has been impossible to secure the adequate co-operation of the school council in the establishment of a department of school hygiene. The work has grown with the teaching force and with the public to the proportions of a full-fledged department and is so recognized on all hands, except by this singular body. On the other hand, during the past year there was introduced and favored by certain members of the board, a measure which was calculated to divide the work in school hygiene, placing several medical inspectors directly under political control and so dividing the whole matter as to prevent the possibility of an effective department. It is probable that this measure would have passed but for the vigorous protest of many of the leading physicians of the city. This, together with other acts of a similar nature, leads me to conclude that city school boards, as at present composed, are not competent to introduce and foster adequate measures for the conservation of the health of the school children. Neither are they willing to employ and follow the suggestions of those who make such matters a life study. Hence it is necessary, if this plan is to be successfully carried out, that certain limits of eligibility should be placed upon membership in these bodies, in order that they may contain men who are vitally interested in the health of the children, as well as men of sufficient executive ability to secure sanitary school conditions.

Among other qualifications, they should be men of mature judgment, but an age limit, say 55, should exist. They should have a vital connection with the schools through having children therein. They should be men of assured executive ability through having succeeded in business. They should not be known as local politicians. These matters are emphasized because the school board is the snag on which such reforms usually stick, and because physicians, through combination with other organizations of good citizens, can materially assist in the election of an effective school board.

The average superintendent, supervisor and principal will assert that he is interested in the health of the children. In a general way this is true. But it usually requires a fierce flame of public opinion to secure adequate action on his part. Frequently he is content to foster the traditional subjects, grammar, arithmetic, etc., and let other people look after the health of the children. He has not yet realized that the problems of education in the wretchedly built and governed American city of to-day are quite different from those of the towns and villages either of to-day or of a generation ago. It takes an occasional revolution in school management to awaken him to this fact. Such a revolution the medical fraternity can, if necessary, inaugurate. On the other hand, if the superintendent is a leader in educational matters, he will need the hearty and continuous support of all medical men, in order that he may carry out his plans in conserving the health of teachers and children, in spite of the constant interference of scheming politicians, which he is sure to encounter at every turn.

So evident has been the growth of interest and accomplishment among the rank and file of the teachers, that I am pursuaded that the teaching force does not stand in the way of the introduction of school hygiene into city schools. In Cleveland the great majority of the teachers have given the work suggested fully as much attention as justice to other branches will allow. The instances are very numerous in which teachers, at their own expenditure of time or money, and often both, have taken care of pupils whose parents were unable to do so. Many of the teachers are far more enthusiastic about all such matters than are any other class of people. They deserve the highest praise for their efforts along these lines.

2. Where the superintendent or the board, or both, are inoperative the problem can be solved, if an able man is available, by his election to the executive position—that of director of schools, for instance. To do this the medical fraternity must secure the co-operation of all civic organizations which stand for the public welfare and through their efforts elect an executive, who is at the same time a sanitarian. The difficulty in carrying out this plan arises from the fact that the necessary business qualifications for this office are not easily secured, even without the special qualifications of a sanitarian.

3. This plan is the one which in my estimation covers the larger number of cases and is the more hopeful of immediate success. The committee on state medicine of the leading medical society, or the local pediatric

society, may call to its support in each school district the services of two or three physicians who are well and favorably known. They should be men who are established in practice. As special examiners, these men should give half a day or more to the work of subcommittees. The general committee should place in their hands lists of questions covering the more important phases of school hygiene. To secure such lists, reference may be made to the outline of school hygiene given in this paper. A list recently used in Cleveland is herewith given.

REPORT ON SCHOOL HYGIENE.

.... School.

1. *Provided* all should use them do you find the play grounds ample for the number of children in the building?
....

2. Are the play grounds in good condition for play? .....

3. Do you find any rooms from which the light is cut off by annex or other buildings? ....

4. Are the buildings so located and is the school yard of sufficient size to prevent the darkening of any of the rooms by the future erection of adjacent buildings of four or five stories? ....

5. Do you find any rooms in which the ratio of window to floor space is less than one square foot of glass to five square feet of floor? ....

6. Do you find that street noises interfere with the instruction in any of the rooms? ....

7. Do you notice a bad odor in any of the rooms?

8. Do you notice a bad odor in connection with the water closets and urinals? ....

9. Upon inquiry and inspection does the heating and ventilating system seem to you to be satisfactory? ....

10. Does the form and arrangement of the school furniture, as you see it in use, appear conducive to eye strain or spinal curvature? ....

11. Do you find the surfaces of the rooms, furniture and halls clean and in good condition? ....

12. How many basement, attic or recitation rooms, relief building rooms and storerooms do you find in use as school rooms? ....

Please add comments. What do you consider of *primary*—of *secondary* importance to the sanitation of this building?

Primary ....

Secondary ....

........................, M.D.
........................, M.D.
........................, M.D.
Sub-Committee at School.

This refers more especially to matters in connection with school property. Questions are asked about conditions which a casual observer might see almost any time upon visiting a building. Here the work of many of the subcommittees has been quite complete and their reports will throw considerable light upon the situation. When they are all collected and tabulated the general committee, appointed by the Cleveland Medical Society a year ago, will have much of the necessary data with which to go before the board of education and, if need be, before the legislature. When it does this, a complete scheme for a department of school hygiene should be placed before one or the other of these bodies, with a strong recommendation for its adoption. In addition, the committee will need to follow up the matter and see to it that its recommendations are really followed. For there are usually enough scheming politicians on a city school board to evade or pervert such measures for their own personal benefit. These should be turned over to a committee of citizens, which, in co-operation with the local papers, will at once inform the public of any deviations from the right path. It will not require many reports, under these circumstances, to secure for the committee a more efficient school board.

Organization.—First of all, a department of school hygiene must have for its head a medical man who is at the same time a school sanitarian. For it is evident that the territory between the practitioner, whose observations are largely of pathologic conditions, and the educationist, whose observation is limited in large measure to mental phenomena, is a broad realm; the realm in which, for the most part, preventive medicine must operate. While it will be noted that it contains much which lies within the fields of actual practice and practical education, it is at the same time evident that there is a vast amount of opinion and a large collection of facts, which, for their advantageous assimilation by a city school system, requires the constant study of men especially trained for this phase of school supervision. On the other hand, that there may be actual accomplishment, rather than mere study of problems, the director of a department of school hygiene should possess the training and the sympathy of his fellow physicians, the skill of the teacher and the organizing ability of the educator. Hence, while he should be familiar with the experiences of the general practitioner, just as should any other specialist, yet his field of operation presents so many problems which neither the general practitioner nor the teacher are called upon to solve that he must be a specialist in this field of preventive medicine if he is to succeed in any large measure. His whole time must be devoted to the subject. Not only this, but he must be both level-headed and at the same time enthusiastic, an organizer, a leader and a worker. This field offers unlimited opportunities to an ambitious, well-educated young physician with plenty of money.

In addition to an efficient head, the department must have assistants. A large amount of office work will accumulate, which can be done by assistants at $50 per month, and which should not be done by a man whose time is worth several thousand dollars a year. To these should be added all special teachers of physical education, physiology and hygiene, etc. In addition, he should have at least one medical assistant to look after special cases and supervise in a general way the work of medical inspectors in the different districts.

Taken altogether, there ought to be sufficient help to enable him at any time to prepare quickly for the superintendent, or for the board of education, an exact statement concerning any condition within the schools which affects the health of teachers or children. Since the larger part of the work in his department lies in supervising the work of teachers, he should have plenty of special teachers, whom he has trained to supervise in an efficient manner the work of the regular teachers. Too much emphasis can not be placed upon this. The regular teacher in the grades needs constant assistance and encouragement. In Cleveland, at least, she receives entirely too little. She has many subjects to teach. Her program is crowded. Wise and constant supervision is required if each hour of the day is to be beneficial.

Medical Inspection.—Without medical inspection of special cases, a department of school hygiene is incomplete. Hence a fund should be available so that the director can call to his assistance physicians in the different school districts to act as his special medical examiners. The fund should be ample to secure the services of a sufficient number of experienced men. At stated intervals they should visit buildings and examine such cases as the principals may send to them. This inspection is of great value. It should not for a moment be thought that it will take the place of a department of hygiene. For many teachers and principals will not send all the cases needing attention to medical examiners unless they know that their rooms are closely watched by special teachers of the department of hygiene and that they are liable to be summarily called to account for negligence in the matter. I have satisfied myself on this point from investigations in city schools where medical inspection is supposed to cover the ground quite thoroughly.

Status.—The advice and the activities of this department should be entirely unbiased. This means that it should have no connection with school politics and should be entirely free from school traditions. It must be, therefore, under civil service regulations. I have held the position that its head should be an appointee of the superintendent of instruction. This certainly is much better than that any professional man should be hampered in his work through an appointment made by designing politicians. My own experience, however. is inclining me to the view that some position, equal with or above that of any present school official, must be created by the state before the health of school children receives the proper consideration at the hands of the educationist and the politician. These people fight each other, while the teachers go without adequate facilities, the children suffer and the people become distrustful of the efficacy of public education.

DIAGNOSIS OF THE BACKWARD CHILD.*

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To formulate a definition which will describe the term "backwardness" in children is a task of considerable difficulty. It is made still more difficult by the extreme vagueness of the term as used by more recent writers, who use the terms "backward" and "feeble-minded" almost interchangeably. The truth of the matter is simply this, that there is no sharp line of distinction between the normal and the so-called backward child, or between the markedly backward or feebly-endowed child and the high-grade imbecile. No standard of mental activity has ever been fixed by which we can accurately determine these questions. Psychological studies, which are now being actively pushed. both in institutions for normal and abnormal children, promise in the near future to give us some more definite standard on which to base our diagnosis.

The variety of opinion on this subject is well illustrated by comparing the report furnished by Prof. Will S. Monroe, who gathered statistics of 10,000 school children in California by means of circular letters sent to the different teachers of the state, with those of others who have investigated the same subject. The report of this gentleman, compiled from the answers to his letter, shows the teachers considered nearly 10 per cent. of their charges as backward. Dr. Francis Warner, member of the Royal Commission to examine the blind, deaf and other classes requiring exceptional methods of education, out of 100,000 school children reported 7 per cent. dull and backward, while 1.6 per cent. required especial care and training. A report formulated from the examination of 42,000 children in Great Britain of the elementary school class between the ages of 7 and 13, gives 1 per cent. of defective children as the result. Mrs. Esten, supervisor of special schools in Providence, R. I., a city of over 150,000 inhabitants, states, in a recent article, that 50 pupils were then receiving instruction in their special schools, and that a recent canvass had revealed the fact that there were yet about 100 children who ought to be provided for. This is in decided contrast with the first statistics quoted, and shows how badly some standard for comparison is needed. Dr. Shuttleworth, in an article on the treatment of children mentally deficient, laughingly calls attention to the high standard Americans set for their children, and states that he was jocosely warned by an American friend, when he was about to make a tour of the institutions for the feeble-minded in the United States, that "He guessed I would find their feeble-minded children about equal to the average British schoolboy." It is plainly to be seen that in the teachers' returns compiled by Professor Monroe, each teacher must have filled her return according to her own individual judgment as to what should constitute a normal average.

I seriously doubt if it is true that a boy is necessarily dull or backward because he can not follow the curriculum formulated in the schools. However excellent this may be for the average child, there are many boys classified among the dull ones in their classes who turn out to be successful men after their school days are past. What they may lack in the faculty of merely memorizing, they more than make up in their power of reasoning and acuteness of judgment. Certain special faculties may be entirely absent, and while this lack may interfere with a boy's school progress, and may deprive him of much enjoyment, it may not in any degree interfere with his usefulness or affect the public estimate of his mental strength. These include such faculties, for instance, as the musical faculty, the mathematical faculty, discrimination of colors, etc. Our estimate of mental strength must rather be formed from his power of attention, his strength of memory, his efficiency in that method of reasoning which comes to us all instinctively in our early days, and which has been quite extensively treated by Carpenter, under the every-day designation of "common sense." On the other hand, abnormally slow perception, lack of power to fix the attention, distorted judgment, feeble memory, or a decided lack of moral sense are mental symptoms which would tend to place the subject among the backward class, and if different methods are faithfully tried to remedy these defects without marked result in a reasonable time, we may safely conclude that they indicate not only a backward but a feeble mind. Among the physical symptoms which are strongly indicative of lack of normal mental growth, the failure of articulate speech, where defect of the auditory apparatus, or that concerned in articulation does not exist, is the most conspicuous. In the absence of these physical defects, if the appearance of speech is delayed beyond the age of 6 years, it may be safely inferred that cerebral deficiency or lesion exists, and that some mental weakness surely accompanies the child's silence. Gait and posture are of some value, taken in connection with other symptoms. The former is apt to be slow and awkward, the latter stooping. The lately published observations of Wiley would tend to show that the sense of touch is generally less sensitive than in the average child. Sensibility to pain, especially in cases of marked dulness, is very frequently found and would tend to indicate a lack of tone in the whole nervous system. Family history will render valuable aid. As all mental action has a physical basis, and as the physical formation of each individual is but the sum total of ancestral traits, we may expect parental weakness to exist, either active or latent, in the offspring. Again, while a fair memory by itself is no indication that mental weakness or delayed mental growth is not present, a failing memory, or one that fails to respond to training by any marked improvement, may be looked on as abnormal.

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* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Diseases of Children, and approved for publication by the Executive Committee of the Section: Drs H. E. Tuley, Edwin Rosenthal and Samuel W. Kelley.

Much argument has been held whether moral sense should be regarded as a purely mental trait, and whether such a thing as moral imbecility exists. On the minds of those who have daily intercourse with large numbers of defective children, the actual existence of moral imbecility has been impressed as a disagreeable fact. So radical is this defect in many cases and so persistently will a child do evil and not good in spite of all efforts to lead him into right methods of thought and action, that one is forced to regard it as a perversion of normal mental development. Histories of cases have multiplied, following individuals with this affliction through life, and it has been demonstrated that in certain instances favorable environment would invariably bring into action the old evil practices. I have seen cases of this kind where the remaining mental faculties were nearly normal, in which the individuals insisted that when the impulse to do wrong came upon them it was stronger than their will power and beyond their control.

Let us glance for a moment at the normal growth of a child's mind, in order to understand better where failure may occur. After the instinctive acts of early infancy, the first thing that attracts us is the awakening of the power of attention in the child, such as the movement of its eyes as they follow a bright object. This faculty rapidly gains in acuteness and is the basis of mental growth. The failure of the proper development of attention, or we might say, the power of fixing the attention, is fatal to all attempts at education. From this time, as the various sense organs assume functional activity and convey sensory impressions inward to be stored in the proper groups of brain cells, we see the beginning of memory and the child becomes an animated interrogation point, worrying its elders by constant questions in its hunger for information. By this time we will be able to gauge somewhat the child's probable capacity for acquiring information, for on memory depends largely the child's mental capacity. Still a little later and the will power exhibits itself in control of these memories, formulating them into thought. A child learns to connect ideas or impressions which come to it through the sense organs and have been stored as memories, and to draw from them fresh ideas. In other words, the reasoning power develops and the child begins to reason from the known to the unknown. Furthermore, he begins to realize the value of each thought, or idea, and judgment has its birth. This is the most valuable of all mental acquirements. An individual with a rather weak memory may make a poor showing in school, and yet with acute reasoning powers may be able to make most valuable use of what he does remember. Such children ought by no means to be classed among the dull and backward. With the development of reason and judgment is aroused a respect for the rights of others, which forms the basis of moral sense. These faculties comprise, I believe, all the important elements of a normal mind. Their practical value in the mental framework varies much, but the failure of any one of them to appear at the usual age constitutes a backward child. Whether the child be temporarily backward or inherently backward or feeble-minded, is a question that we can decide only by examination and training. From what I have so far presented we may advance the following conclusions:

Delay in mental development may be temporary or permanent. In the former case we should speak of the child as merely backward, in the latter, as feeble-minded.

When this condition is due to a lack of proper training, or to temporary ill health, it may often be entirely overcome by proper treatment.

There has been no definite standard established upon which to decide whether a child is backward or not and we have no other guidance than by comparison with supposed normal children of the same age.

The qualities on whose absence or faulty development we form our judgment are acuteness of perception, power of attention, strength of memory, accuracy in reasoning and judgment and growth of moral sense.

Certain physical conditions are of aid in diagnosis of a backward condition, especially when considered in connection with delayed mental growth. Prominent among these are deformities; defects in or absence of articulate speech, not due to mechanical faults or deafness; defects in co-ordination and an awkward gait; defective physical growth and lack of acuteness in different sense organs. There are none of these absolutely pathognomonic, with the possible exception of lack of speech due to cerebral defect.

I can not close this paper without calling attention to one fact, which is, perhaps, not in direct accordance with its title, but yet is of vast importance from a sociological point of view. The comparatively large number of backward and high-grade imbecile children has led to the opening of schools for the special teaching of this class. It is probable that a large proportion of the children will be high-grade imbeciles, or those in which the mental defect is permanent. This may be largely masked by education and the children be graduated to marry and take a place in our great social life. These schools should be constructed so as to constitute clearing-houses to separate the inherently feeble in mind from those whose mental growth is retarded by circumstances temporary in character. So conducted they may be most useful. Education will not remove in a few years weaknesses which may have been generations in developing, and children thus matured will probably select one of their own mental grade in marriage, possibly a graduate from the same school. Hon. J. D. Alexander, before the National Conference of Charities and Corrections, in Topeka, cites a case where a woman was allowed to leave the Ohio institution and they now have eleven imbeciles, her offspring, to vouch for the success of such practice. Such instances are so common, though perhaps in less degree, as to form a valuable object lesson. If our high-grade imbecile girls and boys follow this course, we shall need many more such special schools than have been now established, and we may feel reasonably sure of pupils enough to fill them.

SPEECH AS A FACTOR IN THE DIAGNOSIS AND PROGNOSIS OF BACKWARDNESS IN CHILDREN.*

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The subject under discussion is one of more than usual importance. It is said that there are, in Philadelphia alone, more than twelve hundred school-children who are unable to keep up with their classes and for whom no adequate provision has been made. This large number does not include the high-grade imbeciles and idiots who never get into the schools, but only those who are said to be "backward in their studies."

Scientific discussions often fail to be of value because of a lack of a definite and uniform nomenclature and therefore it may be well to come to some understanding as to exactly what we mean by the term "backwardness in children." No two children are of exactly the same grade, mentally, but they differ in this respect as they differ in respect to physical characteristics. The backward child, according to the common acceptation of the term, is one who is below the average intelligence of children of the same age; and for our present purposes, this is probably the best definition; but a more scientific one would make the term "backward child" mean one who is not living up to his own possibilities or capabilities. This definition, however, is in advance of the times and it will be applicable only when children receive more individual study and training and when they are not herded together like sheep, regardless of their peculiar characteristics and needs. Moreover, it will be observed that backwardness, in this paper, will be regarded as a disease. This is for the sake of convenience and not because it is in all respects deserving of so much distinction.

The diagnosis of backwardness is not difficult. All children who do not, can not or will not keep up with their classes must be regarded as backward, according to our definition, and they should have our most careful consideration.

The prognosis in these cases is not so simple, for this involves an inquiry into the causes, and some experience in the various methods of special training. We must take into consideration the inherent possibilities of each individual child and determine what his mental capacity and capabilities would be in a suitable environment and under more favorable conditions.

The object of this paper is to consider to what extent a study of the speech of children will aid us in making the diagnosis of backwardness and, more especially, in venturing on a prognosis. It may be said, without fear of contradiction, that freedom of speech is an absolute essential to the normal development of children and that any defect of speech, however slight, must make its impress on the child's mentality and prevent him from doing all that he would otherwise be capable of doing.

Not all children with defective speech, however, are thus prevented from keeping abreast of their fellows in school. Occasionally we find one with sufficient concentration and will-power to succeed, in spite of the handicap which defective speech must entail, but this is the exception and not the rule.

Speech is a tool of the mind and just as the artisan is dependent on good tools for success in his work, so is the child dependent on good speech for the normal development of his mental faculties; and just as a poor tool may be responsible for faulty work, so is defective speech oftentimes the cause of slow development or backwardness in children. Many illustrations of this fact might be given. One or two will be sufficient to emphasize its importance.

In 1895, a young man, 19 years of age, was brought to my office for a prognosis, the diagnosis made by his family physician being imbecility. He had many symptoms of this disease. He was backward in his studies, so much so that school had to be entirely given up. He could not speak, read or write intelligibly, and he was unable to spell the simplest words. His expression was vacant and staring. His lower jaw was receding and his mouth open. He was exceedingly awkward in his movements and unable to express himself in any language. His speech was wholly unintelligible. He could not give his name or his residence, and he was unable to make the conductor of the railway train understand at which station he wished to get off.

The prognosis in this case could not be made offhand. It was of the utmost importance, because on it depended the treatment and the patient's future usefulness. After careful investigation, it was discovered that one great barrier in the way of mental development was the lack of power of expression and it was manifest that until the faculty of speech could be established the man could never become a useful citizen. On the other hand, it was assumed that if the faculty of speech could be acquired, the mere effort necessary to its acquisition would serve to develop some degree of mental power. The question therefore arose as to what was the cause of the tardy development of speech. On examination it was found that the patient had a defective tongue. The genio-hyoglossus muscle was too short and bound the tongue down to the floor of the mouth and thus prevented its normal action in the processes of articulation. A simple operation was performed, which consisted in a division of some of the anterior fibers of this muscle, thereby giving a free tip to the tongue. The operation was followed by a systematic course of training for the purpose of teaching the use of the tongue and the related organs in processes of speech. A little more than a year sufficed to accomplish this result and the boy who, up to 19 years of age, was supposed to be an imbecile, is now one of the most successful real estate brokers in Philadelphia.

This case is illustrative of a large class of children who are backward, not because of any organic mental deficiency, but because they are lacking in the power of an easy and natural expression of their thoughts.

Another case was that of a lad brought to my clinic at the age of 15 because his speech was unintelligible and he was backward in his studies. Unlike the former case, however, he was able to make some progress in certain lines of school work and presented an appearance of one having greater intelligence. He had a distinct vocabulary of sounds of his own unlike any I have ever heard and it was by no means limited. He could talk and read fluently, but it was all a meaningless jumble to everyone but himself and he claimed that the substitutes he used sounded to him the same as the actual words spoken by his fellows. In other words, his ear did not discriminate between his own jargon and the normal speech of other people. He was not a robust boy. In early childhood he had some organic heart affection. He was a "blue" baby, had spasms and some difficulty in respiration. He also had web fingers on both hands. indicating arrested prenatal development.

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This boy was backward merely because he could not speak intelligibly; because he was unable to command that important tool of the intellect, language. A few years of speech training, however, resulted in a complete change in his mental and physical processes and he is now holding an important office position in one of the departments of the University of Pennsylvania.

Many other similarly interesting cases have come under my observation, but the above two will suffice to illustrate the importance of speech as a factor in the diagnosis and prognosis of backwardness in children, and from the history of their cases we may draw the following conclusions:

1. It is not always possible to determine at a glance the cause of backwardness in children.

2. Backwardness in children is not always due to a central lesion, but may be the result of arrested cerebral development due to some abnormality of structure in the peripheral organs.

3. A very common cause of backwardness in children may be some abnormality of structure in the peripheral organs of speech.

4. So closely are the speech centers related to the ideational centers of the brain that any impairment of the one generally results in a corresponding impairment of the other.

5. The best method of arriving at even a proximately correct prognosis in cases of backward children is to apply the speech test, or, in other words, to ascertain by careful study and experiment to what extent the faculty of speech may be improved, and it will be found that in those who are susceptible to training in what may be called the refinements of speech are the ones for whom we may promise the best results, and that possibilities for general development will be proportional to the capacity for speech development.

A PLEA FOR THE BACKWARD CHILD.*

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Before treating this subject in any detail, I wish to define the term "backward child." By this I do not mean a defective child, but one whose body, as well as intellectual faculties, are all in existence, and whose parentage is not of a degenerate character, but normal, as we generally understand the term. The line between normal and abnormal may be somewhat hazy, not well defined, nor perhaps capable of exact definition, but we all somehow have a very fair conception of the expression, unless we appear as experts in a will case in court. Yet if we remember our experiences in the school room as teachers or even as fellow pupils, or make observations in schools as visitors, we do not always have this same opinion, as to the brightness or dulness exhibited by various children. Thus many a child, somewhat backward in its studies, has been condemned as a dunce or even defective, by the too hasty observer, and, in the class under discussion, all on account of a lack of perception on the part of the teacher or parent making this unfair and unjust deduction.

The fallacy of observation is due to contrast; this I wish to explain, and show that comparisons in these cases, as the old adage says, are odious. The comparison is with the so-called bright or forward child. By observation we have learned to expect a certain amount of physical and mental development from a child at a given age. If the child is unusually observant, with a good memory and the power of expression, it is called bright or even precocious, and, in comparison with suc children, all others seem more or less dull. Wher advancement is normal, we call such children norma or average and even recognize good minds. Where however, the expected progress is slow, comprehension more or less obtuse, and the power of expression limited we say such children are backward, dull, or even may imagine them defective. All this is a matter of comparison, with the bright child as our model.

The truth is, there is nothing wrong with the child He has good powers that are latent or of slow development, or is really developing in a direction different from the course intended.

For instance, a morning-glory vine twines around its support from right to left, while the hop vine twines in the opposite direction. Both are correct, and it is just as useless an effort to reverse these directions, and serves as little good purpose, as it is to make these so-called backward children follow the course of the so-called bright child.

An astronomer should not be deceived by a meteor with all its brightness and brilliancy, and make invidious comparison to the disadvantage of the pale, far-distant, fixed star, which upon study proves to be not only a sun but a whole solar system; so in like manner, we should not, after observing a bright child with good memory but of ephemeral mental development, underrate the slower, dull pupil, whose mind powers are latent, not absent and in the process of a splendid development if rightly studied, and when once made manifest, show an intellect as strong and unwavering as the fixed star.

Great men, like Shakespere, Sir Walter Scott, Edison, Beecher, Peter Cooper and many more, were condemned by their teachers and proclaimed hopeless dunces and their parents were beseeched to take them from school, as it was considered a waste of time and money to keep them there. Milton, one of the greatest poets of the theological school, was 63 years of age before he became known; according to his own saying, he appeared late, but when he did appear he was fit to do so.

While these backward children are not favorites with the average educator, it should be a teacher's duty and pride to search for the hidden talents lying dormant among children of most unprepossessing appearance. Examinations, or tests, as they are more recently called, intended for this purpose, are most dismal failures in this direction, for they reveal not the intellect or the slumbering genius, but only what a child with a good memory has stored from recently gathered facts. And let a happy manner of good expression be added and this child shows to splendid advantage over its fellows. So these tests are not tests after all, only deceptive surface phenomena, with their usual exceptions.

Neither are the cumbersome and high-pressure curricula of our schools, with their many anachronistic arrangements, calculated to advance the subjects of our contention, nor to evolve acuteness and dispatch out of obtuseness and retarded progression; nor are they in any way the least helpful in developing latent or slumbering powers. The adult life is strenuous enough without introducing this strenuous element into all phases of pre-adolescent childhood. In this line we need revision with a special view to simplification rather than complexity, and the arrangement of studies synchronous to mind capacity. But how can we maintain such a statement? Simply by past experiences, from which there are an endless number to draw.

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For instance, these bright boys and girls who were such splendid reciters, and who graduated at the head of their classes, who furnished valedictorians and salutatorians, what has become of them? Did they become the traditional president or governor, the judge on the bench, the bishop or the eminent medical man or surgeon, master mechanic, the great commander? No, they did not! When the evanescent spark of genius first attracted our attention and its meteoric rays dazzled our eyes, we little dreamed that it was only an explosion, a big sound, a flash across the intellectual sky, and all was dark. But the steady glow of a slow but ponderous mind, groping about in the dark, as it were, to get recognition by its own light, to develop by its own evolution, may be long in accomplishing it, but when once known will make its influence felt long after the meteor has passed away and is forgotten.

The brightest diamond in the hands of a bungler becomes a mere mass of useless carbon; in the hands of a master, a diadem fit to adorn the crown of kings. So a really valuable but apparently dull mind in the hands of a superficial educator becomes a useless cumberer in the ranks of life, while under the guidance of a superior intellect, that has discovered under the seemingly unprepossessing exterior a true gem, it is so developed and its course so shaped as to evolve a mind fit to reign among the earth's greatest and best.

The responsibility of educators and parents is immeasurable, viewed in this light. To discover and guide the backward child is the duty of the hour, not to condemn and forever destroy. Our sympathies and warmest endeavors should be invoked by every child that belongs to this category, and every effort should be put forth in behalf of a class, out of whose ranks the earth's greatest geniuses have arisen and led the children of men out of the wilderness of thought into the Canaan of light and bliss.

With Gray we can say:

> Perhaps in this neglected spot is laid,
> Some heart once pregnant with celestial fire;
> Hands that the rod of empire might have swayed,
> Or waked to ecstacy the living lyre.

So it is not how early, but how well, a given person develops; not how soon he accomplishes his life work, but how effective are its results, and how great a factor it may be in the sum of existence. In this sense, it is never too late when a great mind makes its appearance. For,

> "Nothing is too late
> Till the tired heart shall cease to palpitate.
> Cato learned Greek at eighty; Sophocles
> Wrote his grand Oedipus, and Simonides
> Bore off the prize of verse from his compeers,
> When each had numbered more than four-score years,
> And Theophrastus at four-score and ten
> Had but begun his "Characters of Men";
> Chaucer at Woodstock with the nightingales,
> At sixty wrote the "Canterbury Tales";
> Goethe at Weimar toiling to the last
> Completed "Faust" when eighty years were past.
> These are indeed exceptions, but they show
> How far the gulf-stream of our youth may flow
> Into the arctic regions of our lives."

I crave a greater sympathy for the "backward child."

This symposium will be completed next week, together with the discussion.

SECTION OF OPHTHALMOLOGY.

ADDRESS OF CHAIRMAN DELIVERED AT THE FIFTY-SECOND ANNUAL MEETING OF THE A. M. A., HELD AT ST. PAUL, MINN., JUNE 4-7, 1901.

J. A. LIPPINCOTT, M.D.
PITTSBURG, PA.

The precedent established by my honored predecessors of dispensing with a review of the progress in ophthalmology is, in my judgment, a wise one. Even were one disposed to think differently, this would not be an opportune time to attempt such a résumé. For, standing as we do on the threshold of a new century, it would be incumbent on the reviewer to take note not only of the changes of a year but of the advances made in our department of medical science during the hundred years which have just passed into history. During that period thousands of distinguished workers have co-operated in building the imposing structure constituted by the ophthalmology of to-day; and of these thousands there are three to whose achievements alone many volumes of addresses might be devoted without doing justice to the theme. The names of Von Graefe, Donders and Helmholtz will be gratefully remembered long after those of their most noted contemporaries in the spheres of war and statesmanship, the favorite avenues to distinction, shall have been relegated to oblivion.

To one of this mighty triumvirate we owe the priceless gift of the ophthalmoscope which has so marvelously enriched our knowledge and added to our power to benefit mankind. This instrument has now seen fifty years of ever-increasing usefulness, a fact which is fittingly emphasized in our program and in the interesting collection of ophthalmoscopes and ophthalmoscopic literature which, through the efforts of the committee appointed for the purpose, is open for your inspection.

Other subjects to engage your attention are the methods of treatment applicable to the abnormal conditions of the extrinsic ocular muscles comprised under the terms strabismus and heterophoria—conditions which, despite all that has been written upon them, are still in many points obscure.

We shall also discuss the important problems presented by the relation of visual acuity to occupation in general and to the railway service in particular. An effort to elucidate these problems may fairly be expected of this Section, which, as a subdivision of the American Medical Association, is peculiarly representative and National in character.

In addition to these subjects we shall have the opportunity of considering a topic on which much light has been thrown by recent investigations, namely, the nature of the pathological changes produced by certain toxic agents in the retinal elements.

I need not refer specifically to other portions of the program, which is replete with variety and interest, notwithstanding the rule adopted for this meeting by the General Committee of the Association restricting the number of papers presented in each Section to thirty-five. Owing to this rule a number of meritorious articles had to be excluded. In this connection it may be remarked that many of the difficulties of your officers, especially the Secretary, might be obviated if all abstracts were handed in as early as possible. You are aware of the regulation requiring the completed program to be at the office of the general secretary in Chicago not later than May 4. It will be necessary to send it several days earlier if, as seems desirable, the Secretary of the Section is to have an opportunity to examine the proof. As a matter of fact all of the abstracts ought to be in the hands of our Secretary on or before the middle of April.

Inasmuch as the number of papers is now so limited it is highly important that as few as may be shall be "read by title." Those, therefore, who, after sending titles or abstracts, find that they can not attend the meeting should, when they can, notify the Secretary of this fact in time to permit their places on the program to be taken by others.

Allusion has been made to the wonderful development of ophthalmology during the 19th century. This development has in no inconsiderable degree been aided by the labors of our own countrymen, among the most conspicuous of whom was one who has dropped out of the ranks since our last meeting. Henry D. Noyes as a teacher was erudite without dulness, as a writer prolific without being prolix, frank and incisive in debate without ever violating the laws of courtesy—a commanding figure in any assemblage and in private life a charming companion. He and others have made the past century notable. What are we to expect of the present? Let us be stimulated by the hope and belief that the mantles "of the great ones gone forever and forever by" shall fall upon shoulders not unworthy to wear them and that "the glowing pages of the past may be taken as the sibylline leaves of the future."

LATE IMPLANTING OF GLASS BALL IN ORBIT, AND EPITHELIAL LIP GRAFTS TRANSPLANTED TO ORBIT.*

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The late implanting of a glass ball in the orbit is not a new operation; L. Webster Fox of Philadelphia, and many others in other cities, have succeeded well in this line, but the operation had not been done before in Washington, D. C., and there is a feature in this I do not find in others, namely, the fastening together of the cut ends of the recti muscles over the glass ball. My first case of the kind was this:

W. C., white, aged 50, English birth, a farm laborer, received traumatism to cornea, which became infected. Several cultures were made at different times from the discharge, but were negative in results. Complete destruction of cornea ensued from neglected condition, the patient attending the clinic at intervals of a week or ten days only.

In June, 1899, the atrophied globe was removed from left orbit by Dr. Burnett, no attention being paid to the cut ends of the ocular muscles; they simply collapsed, forming with the other tissues a thick cicatrix in the bottom of the orbit, and a great amount of shrinking left a most unsightly cavity. The patient had asked to have an eye shell furnished to replace the diseased globe, before he would consent to have it removed, as his personal appearance was of great moment to himself. One large enough to in any way fill the lids was most unpleasantly staring and disagreeable in appearance; so he came back several times to repeat his request for "one that would move." That, he was told, could not be done; but still he kept coming, until one day I told him that by putting a glass ball into the orbit, it might possibly move a little. He was delighted with the idea and wished at once to make an appointment for the operation. Dr. Burnett, chief of eye and ear clinic of Emergency Hospital, consented to its being done, and kindly assisted in the work.

My operation was the following: The bottom of the cavity was opened; the conjunctiva was raised all around from the surface; the scar tissue was so far as possible removed. The cut ends of the recti muscles were carefully dissected up, and as each one was found, a suture of black silk was passed through the cut end, and it held to one side; the cavity underneath was made large enough to easily hold a large-sized glass ball. After bleeding had stopped, the opposing muscles were brought together and firmly tied over the ball, first the vertical, then the horizontal, the two knots beside each other, after which the sutures were cut short off and were never removed. The conjunctiva was closed over all with five sutures, and the ordinary enucleation dressing applied.

Reaction was very marked in this case. There was much swelling, discoloration, and oozing of fluid, enough to keep dressings wet for three or four days. The last sutures were removed from the conjunctiva twelve days after operation, and a shell was placed in twenty-four days later. To the delight of the patient, to the surprise of all who saw it, and to my great relief, it did move, making fully one-third of the excursion of the other eye.

After a few months a larger shell was used, as the tissues became shrunken, but still giving satisfactory motion instead of an immovable stare. Patient has been doing farm work of all sorts for fourteen months and ball has caused no discomfort, remaining firmly in place.

EPITHELIAL LIP GRAFTS.

Case No. 2.—K. McG., white, Irish born, aged 38, wife of laborer. In heating a tightly-closed can of coffee for husband's supper at midnight, the overheated can exploded, the stream of boiling fluid striking directly in the eye, scalding whole side of face and neck severely. The cornea sloughed off completely, the lids already badly scarred by old trachoma, contracted so much as to show the hollow behind them, making a most ghastly appearance. After the removal of atrophied globe (which was always painful) in June, 1899, Dr. Burnett did an operation in March of 1900, on the orbit, for replacing mucous membrane with skin taken from the inside of the upper arm, where it is thinnest and most pliant; they adhered only in what had been the upper ocular surface, while the lower lid was still everted, and contraction so great that the smallest shell could not be kept in place.

In September, 1900, with the assistance of Dr. Reeve, I removed the cicatricial tissue as much as possible, made the cavity fit a shell large enough to look well; I replaced the mucous membrane with epithelial lip grafts, taken from the inner side of under lip, by means of a cataract knife, without the clamp. The several strips were placed carefully over the denuded surface of lid and base of orbit, the shell put in place to keep them from moving, the lids drawn over and firmly bound up to prevent all motion possible. The lids came together easily and naturally.

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* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee of the Section: Drs. J. A. Lippincott, Casey A. Wood and H. V. Würdemann.

This was done on Monday; the patient returned on Thursday to have the dressings changed. There was not the slightest discharge of pus from the cavity, the mucous membrane having the appearance of always having lived there; it was redressed the same as before. On Friday the patient, to have her children go to school clean, did some washing of their clothes, which from the motion partly displaced one of the strips, and on Monday the loose end was cut off.

She wore the shell night and day for two months, removing once a day to cleanse the orbit. It was then replaced by a larger one; for she came back with the long axis placed vertically, it having dropped out when left in the correct position. A much larger shell was then used, the lids closing easily over it. She does the housework for a family of seven, and still wears it with comfort. The epithelium from the skin placed in the orbit causes the most of the difficulty of cleanliness.

September 3, 1901.—This patient still wears the same shell with perfect ease at the present time, one year after the operation.

Clinical Report.

CASE OF PRIMARY SYPHILITIC LESION OF THE FAUCIAL TONSIL.

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PHILADELPHIA.

The patient, a young lady, unmarried, of good family history, and apparently of good moral character, was referred to me on Sept. 18, 1900, by my friend, Dr. E. K. Perrin.

Her physician stated that she had had an obstinate "sore throat," for which he had administered the usual remedies for follicular tonsillitis, during the past week, with the result that the condition was increasing in severity rather than improving.

The patient dated the onset of her trouble five weeks prior to my examination. She said that she had then taken a surf bath while unwell, from which she caught a severe cold, with headache and muscle pains which lasted for about three weeks, when it "all seemed to settle in her throat."

For a week past she had been unable to swallow any solid food, and could take liquid nourishment only with the greatest difficulty, and for the past two days was unable to take any nourishment whatever, on account of the excessive pain during the effort to swallow.

She had been able to sleep but little during the last two weeks, and although she had been a healthy, robust girl a few weeks ago, she was now the picture of physical distress.

Her color was pale and her expression anxious. Examination of the fauces disclosed very large tonsils, which were congested and angry. The right side was the larger; it was ragged and upon its surface was an ulcer extending from pillar to pillar. This ulcer was nearly level with the surface, and was covered with a thick, grayish membrane, for which there was little secretion.

The left tonsil was swollen and its crypts contained the yellowish detritus so often seen in sluggish tonsils. The pain upon pressure seemed to involve the surrounding parts, as well as the tonsils themselves.

For the three days following her first visit her temperature varied from 99.2 to 100 in the mornings, and from 100.2 to 102 in the evenings. At the first visit she was treated tentifly, her throat being thoroughly cleansed, and a 15 per cent. solution of nitrate of silver was applied to the ulcerated surface; there was no improvement from this treatment, or from the home treatment prescribed.

Upon her second visit, a rash, which was but faintly visible at the first visit, was very evident over her forehead, body and limbs, and the specific nature of the disease was suspected, especially as there was some enlargement of the right cervical glands. She was then placed on 40 grs. of potassium iodid daily and a solution of 1 to 1000 bichlorid was applied to her throat. She had great difficulty in swallowing the iodid solution, but there was some improvement in her condition after this treatment.

On September 24, as the diagnosis was fairly certain, she was given ½ gr. of bichlorid of mercury, hypodermically, and 40 grs. of the iodid daily.

Two days later there was a decided improvement in her general condition; the eruption on her body and face had dried up for the most part, and her throat was so much improved that she was able to eat a soft-boiled egg, which was the first food, excepting milk, she had been able to swallow for three weeks.

On September 29, she was given another hypodermic of bichlorid (gr. ¾), and by October 1 the ulceration on the tonsil had disappeared, and while her tonsils were somewhat enlarged her throat no longer annoyed her, and she was able to sleep through the night and take proper nourishment.

On account of the evident innocence of the patient, and in deference to her surroundings, it was thought unwise to question her as to the possible source of contagion. Her physician, who had known her for some years, feared that she might do herself some personal violence if she suspected the true nature of her trouble; therefore, in the absence of a definite history, it was thought well to confirm the diagnosis by the therapeutic test.

When her condition was nearly normal and she was able to sleep and take proper nourishment, the anti-syphilitic treatment was withdrawn (October 10), and she was simply kept under observation.

In two weeks' time, after she had remained away several consecutive days, against our advice, the skin lesions had broken out anew, over her whole body, and two mucous patches were found on her right tonsil, and three on the left; the appearance of the throat, however, being entirely different from that of the first visit. The hypodermic injections were then renewed in large doses (½ gr.), and 30 grs. of the iodid were given daily.

As all visible lesions improved within a week, and have now nearly disappeared, the diagnosis is confirmed, and the future course of treatment is determined. While the cause of the infection could not be positively determined in this case, the circumstantial evidence all pointed to an innocent inoculation, probably from the caresses of one who had secondary lesions in his mouth. The stratified squamous epithelium which lines the mouth and fauces affords excellent protection against germs entering the system at these points. The ragged hypertrophied tonsil in this case rendered the fauces more vulnerable; the cells lining the tonsil crypts were probably soaked by cheesy detritus and desquamated by hawking and "clearing the throat," thus exposing the underlying structures and affording an excellent soil for the virulent specific germs.

The case above related occurred in the right tonsil, which is the more commonly affected in these conditions. There have been more cases reported of chancre of the tonsil in men than in women.

Sex Determination from a New Point of View.—Flammarion has been studying, since 1894, the action of the solar rays on the life of plants and animals. He announced at a recent meeting of the Paris Académie des Sciences that he had found the normal proportion of males born among silk-worms was very much increased if the worms were kept in darkness or under dark-colored glass. Under light-colored glass the normal proportion of 50 per cent. was maintained, but under dark-colored glass the proportion increased to 68 per cent. He also found that the proportion of males was increased still higher if the worms were insufficiently fed. Even under light-colored glass, on insufficient food the males averaged 78 per cent. He queries whether this latter fact may not indicate that the effect of the dark-colored glass is merely to diminish the appetite and thus cause insufficient alimentation.

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THE PREVENTION OF THE SPREAD OF PULMONARY TUBERCULOSIS.

The demonstration by Flügge and his pupils in Breslau, and also by others, that tubercle bacilli are disseminated in fine sputum particles during the talking, coughing and sneezing of phthisical patients and the fact that guinea-pigs may be rendered tuberculous by exposing them to the coughing of the consumptive, have led to the belief that the dissemination and inhalation of droplets of sputum laden with bacilli may be one of the most important methods of spreading pulmonary tuberculosis. Of course the same method undoubtedly obtains in other diseases also, such as leprosy, influenza, the pulmonary form of pest, etc. Recently several new investigations along these lines, but with the special object of teaching us something practical with respect to the prevention of tuberculosis, have been published from Flügge's laboratory.[1] Investigation by Heymann has shown that the dust which results from dried sputum is comparatively coarse, and for that reason endowed with a rather brief infectivity, the most dangerous because lightest and therefore carried the furthest being shreds and threads of handkerchiefs and cloths, especially when moistened with only small quantities of sputum. Naturally handkerchiefs should be disinfected frequently, say after being used twenty-four hours. Paper handkerchiefs, which can be burned when used, are especially recommended. In Cornet's celebrated investigations concerning tubercle bacilli in the dust of rooms occupied by consumptives the material was gathered by means of moist sponges, which would take up adherent masses of sputum that had been deposited directly and not by transport in the air. Heymann's investigations indicate that even in neglected consumptives' quarters the dust that forms is not at all everywhere infective and that when gathered by means of wet sponges a much larger proportion of the guinea-pigs injected become tuberculous than when swept together with a fine dry brush. But in factories, railway carriages and street cars the shaking might set in motion even the larger particles, and new researches are planned to cover the special conditions here found.

The Breslau investigators formulate the rule that during coughing the consumptive should be at least arm's length removed from other persons and he should hold his handkerchief before his mouth. In offices and working rooms the distance between the heads of the occupants should be at least one meter. This rule is based upon actual demonstrations of the dissemination of bacilli-laden particles during coughing. And after coughing it does not seem that the particles settle immediately, but may remain floating for some minutes at least. Plates exposed to the spray from coughing were found sterile after three days when kept in the light, but contained virulent tubercle bacilli even after eighteen days when kept in the dark, thus showing again the bactericidal action of light. While there seems to be no question but that masses of bacteria are hurled out from the mouth especially in coughing, yet it might be doubted that such bacteria are actually inhaled by persons standing about naturally. Nenninger, however, found prodigiosus bacilli in the basal parts of the lungs of guinea-pigs subjected for half an hour to an atmosphere into which a spray of a suspension of this bacillus had been thrown. This demonstration would seem to throw doubt upon the generally accepted statement that the normal lung as a rule is free from bacteria. And the important bearing of these various observations upon autoinfection of consumptives should not be lost sight of.

The points briefly touched upon may serve to indicate that much, very much is to be accomplished for the prevention of tuberculosis by following the indications that are derived from careful, experimental and other studies of the dangers associated with the sputum, both moist and dry. The people in general must be educated and instructed in these facts and their significance. As long as we have such a rich chance to attack the bacillus of tuberculosis directly let us not seek rest from the great responsibility in vague theorizations concerning special disposition of tuberculosis, etc. In the larger cities of this country much is being done to lessen the manifest evils of promiscuous expectoration. Attention must now be paid to what may be called the hygiene of coughing.

THE INFREQUENCY OF PRIMARY MALIGNANT TUMORS OF MIXED TYPES AND ITS BEARING ON THE CANCER QUESTION.

The many recent and valuable discussions of the cancer question, notably Senn's comprehensive review in a late number of this journal, Park's exposition of the parasitic theory in THE JOURNAL,[1] and C. P. White's[2] amplification of Ribbert's theory of tissue tension, omit one important feature in the biology of malignant tumors, namely, the rarity with which the epithelial and mesoblastic types of malignant growths occur together. This fact, however, is of much importance. In his report of a primary tumor in the thyroid gland of a dog, which was composed of an intimate admixture of the two types, H. G. Wells[3] states that his search of the literature revealed but seventeen cases in which it was demonstrated with reasonable accuracy that a single individual presented simultaneously an independent carcinoma and an independent sarcoma. This does not tend to support the assumption of White that the general condition of the patient is of importance in determining that local disturbance of equilibrium, which he argues would lead to tumor growth; for, if any general condition were responsible it would be reasonable to look for a much greater frequency of multiple malignant tumors. Wells found further only three cases in which it appeared probable that a primary tumor consisted of both sarcomatous and carcinomatous elements, and in all three the site was the thyroid gland. In one of these cases some of the secondary growths were purely sarcomatous, some purely carcinomatous, and some resembled the primary tumor in containing both types of tumor.

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[1] Zeitschr. f. Hyg. u. Infektionskr., 1901, xxxviii, Ht. 1.

[1] September 14.

[2] Jour. Path. and Bact., 1901, vii, 339.

[3] Ibid., p. 356.

From the point of Cohnheim's theory we are justified in the expectation that mixed tumors would be frequent, perhaps the rule, because most of the "embryonal matrices," containing epithelial cells, also have a fibrous framework; yet the stroma of adrenal tumors, arising from misplaced adrenal tissue in the kidney, has not been found to assume sarcomatous appearances. Perhaps the renal tumors of mixed structure, the so-called embryonal adeno-sarcomas of the kidney, which contain not only epithelial and connective tissue elements, but also muscle fibers, might be cited as an exception to this statement. Embryonal adeno-sarcoma of the kidney, however, owes its malignancy wholly to the sarcomatous portions, the epithelium never taking on malignant, infiltrating properties. These tumors demonstrate that all of the structures of the fetal kidney may develop simultaneously into tumor, but epithelium and stroma do not become malignant at the same time.

Turning now to the parasitic theory of tumors, we find that, no matter what the nature of the parasite is thought to be, whether protozoic or vegetable, the ideas vary as to the way in which the parasites operate; because some investigators hold that carcinoma and sarcoma are due to a single organism, which causes a carcinoma when infecting epithelium and a sarcoma when infecting connective tissue, while others think that the organism of sarcoma is different from that of carcinoma though the two may be closely related. Now if the same organism were capable of causing carcinoma and sarcoma it would be reasonable to expect that it would frequently set up proliferation in both tissues at the same time and that mixed sarcoma and carcinoma would be common, which is contrary to fact. If the organism of carcinoma is different from that of sarcoma, single tumors would be the rule. Of course mixed infection with the hypothetic organisms might occur, either from the beginning, or from the implantation of one upon the other as is the usual order of things in mixed infections with ordinary pathogenic parasites. This idea agrees better, therefore, with the comparative rarity of mixed malignant tumors.

The question of cellular specificity may be referred to also in connection with this matter. If each cell did not produce its own kind mixed tumors of malignant character should be common. The infrequency of such growths bears out the doctrine of the specificness of the cells. In the case described by Wells he found no evidence of the transformation of epithelium into sarcoma cells, or conversely.

MEDICAL ORGANIZATION AND THE PUBLIC.

The objects of organization of the medical profession are not selfish ones. While some of these objects look to the well-being or the material interests of the profession in many ways, there are others which are for the good of the people also. The fight to be waged against quackery, charlatanry and pretenders, and for better education and higher standards of qualifications for entrance into the profession, itself, is not with the idea of simply bettering that profession, but for the protection of the people as well. Some of the objects to be obtained by organization are of direct advantage to the people and not even indirectly to the profession. Some of these are better sanitary laws, legislation for the prevention of disease, for the control of epidemics, and for the "enlightening and directing public opinion in regard to the broad problems of state medicine." The profession has nothing to hide or to be ashamed of in this work of organization, but, on the contrary, everything to be proud of and to willingly submit openly, candidly and freely to an intelligent public.

It is most gratifying to find in one of the solid monthly magazines[1] an article in which the objects of organization and the plans on which organization is to be effected, are elaborated. It is especially gratifying because the magazine in question admits to its pages only articles of merit and on important topics. It is written by Dr. P. Maxwell Foshay, of Cleveland, who was one of the members of the Committee on Reorganization of the American Medical Association, and who is now Secretary of the Ohio State Medical Society and doing effective work in organizing his state on the plan outlined.

In this article he shows that the attitude of medicine toward the world is very different from that obtained when medicine was encumbered by superstition, ignorance and charlatanry, much of which has been swept away by the recent developments of rational medicine. The ideal of modern medicine is the prevention of disease, and it therefore follows that the profession desires to be understood and be aided by an enlightened public intelligence. He calls attention to the new school of medicine as described by Dr. Reed in his presidential address at St. Paul, refers to the report adopted at the last meeting of the American Medical Association, and outlines the general scheme of organization. Such contributions read by an intelligent laity can not but help in the great work. We wish we might see more of such articles and on topics that are now discussed only in medical journals, but which, if presented in the lay journals in an intelligent manner and by the right men, would be the means of making the profession less misunderstood than is now the case.

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[1] The Organization of the Medical Profession: The Forum, October, pp. 166-171.

THE TRAINED NURSE AND HER POSITION.

Dr. Malcolm Morris used to call the trained nurse a parasite upon the medical profession. The usual idea conveyed by this term is hardly the one he intended. What he meant was that her position is, what she sometimes forgets, a purely ancillary one and that her useful existence is dependent upon the medical profession. It is hard, however, for any of us to be duly humble; the trained nurse is as liable to have her conceit enlarged as anyone, and, under the adulation she receives, perhaps more than some. A very useful class of persons as a whole may, therefore, produce specimens that remind one of the objectionable kind of parasites that bite their hosts and benefactors. One is reminded of this by a recent address given before a nurses' convention, in which the speaker, a hospital head nurse or superintendent, after reviewing some well-known defects of political hospital management, for which, in spite of what appears to be the implication, the medical profession can not be held to be generally or largely responsible, she indulged in certain disparaging remarks and insinuations against physicians. She expressed, for example, a belief that the objections to the dispensary abuse only comes from men who are incompetent and lazy, and reiterated the venerable chestnut that physicians are by nature and training unfit for administrative duties.

As this is the main argument of those who keep up the real abuses she mentioned, her good judgment or her sincerity seems questionable. Her views, it is said, were shared and endorsed by others of her occupation, and, from the newspaper reports, the general temper of the convention seems to have been reflected by her remarks. It is unfortunate should nurses' organizations breed this sort of thing, and that those who ought to be a valuable assistance in the care of the afflicted should injure their usefulness by self-overvaluation.

Another instance of bumptiousness on the part of nurses, and one or two internes as well, is afforded by the very free criticisms of the medical treatment of our late President as reported in a Chicago paper. If they are not misquoted they were very free in their remarks, criticising the medical attendants of the late President both directly and by implication, the criticisms being such as might be expected from those whose limited knowledge qualified them in their own opinion to pass judgment upon men of national and cosmopolitan reputation. It apparently did not occur to them that as nurses and assistants there might be an impropriety in their expressing opinions from a distance on the surgical or medical treatment and that by leaders in the profession. The usefulness of the nurse is and always will be gauged by her faithfulness as a subordinate intelligently carrying out the directions of the physician, and it will be impaired or lost altogether if she indulges in public or even private criticisms of her professional superiors.

THE QUACKS OF BERLIN.

According to the *Medical Press and Circular*, the official records of the city of Berlin show that 60 per cent. of the quacks there prospering have been ordinary day-laborers before they blossomed out as professed benefactors of the afflicted, that only 40 per cent. have had an elementary common school education, and that of the female contingent about 58 per cent. have been servant girls. Nevertheless, it is probable that they have their share of the practice among the wealthy and *soi disant* cultured classes, and, as the irregulars here claim for themselves, "pull silver doorknobs" perhaps almost as much as better qualified practitioners. We conjecture this because human weakness is not a matter of national boundaries, and Germans are, according to our observations, no more sensible as regards medical impositions than other nationalities. Another interesting fact also related is that about 30 per cent. of the Berlin quacks have criminal records—we suppose this is apart from their medical careers—and yet they thrive.

LAY CONTROL OF CHARITIES.

The beauties of patronage and exclusive lay control are illustrated by a news item that comes to us from over the water. The Duchess of Sutherland it appears has established a home for crippled children, a useful charity over which she evidently retains the supervision. A staff of doctors have until lately given their attention to the medical needs of the inmates, but very recently the titled patroness or proprietor of the establishment has introduced an hereditary bonesetter to treat them. The medical staff naturally have objected, and what the result will be has not thus far been revealed. The Duchess is herself apparently so well satisfied with the bonesetter that she insists upon his retention, and doubtless, after the manner of the laity, considers the physicians altogether in the wrong for refusing to co-operate —if that is the word—with him. It would seem, aside from the professional point of view, that the opinion of some half dozen reputable, educated physicians, giving their services gratuitously, ought to count against that of a single uneducated manipulator, but that is apparently not the case. The medical and surgical treatment of the patients was, therefore, left to the bonesetter, whose skill and success where the doctors fail is vouched for by the Duchess. She will probably in the end come out a wiser woman, but in the meantime somebody is liable to suffer and she and her friends will only blame the doctors.

RELATION OF TAXATION TO TUBERCULOSIS.

A French physician has in a recent paper traced a direct connection between taxation and tuberculosis. He finds that the mortality from this cause is very much higher in France than in England, in spite of the climatic disadvantages of the latter country, which with its damper and foggier seasons might be supposed to favor the disease. He accounts for the difference by the better nourishment of the Englishman. The Frenchman is handicapped by excessive taxation, which makes the cost of living high and restricts the poor to bad and insufficient food. In Paris the matter is made worse by the "octroi" laws which make living there much more costly than in its immediate suburbs. All this is due to the costly militarism of continental European states; it is a penalty they pay for distrusting and hating each other. When Great Britain in the early part of the last century suffered similarly from unwise and excessive taxation, with its corn laws and its window tax shutting out light and ventilation, its mortality was also high, and the improvement in public health has followed tax reform. While we can not get our statesmen to study medical and sanitary matters we should as a profession see that they do not sin ignorantly in these ways. There is hardly a question that arises in government or politics that has not a possible medical bearing or on which medical science can not throw some light. What we pay for lack of this can not be told, but it is surely often a heavy price and may entail disaster. Public medicine in this wider sense in its relations to economics, legislation, and the like, is a field that is well worth cultivation. At present its importance is too little appreciated by our lawmakers and it is our duty as a profession to do what is in our power to enlighten them.

THE QUESTION OF SPECIALIZATION BY UNDERGRADUATES.

The field of medical practice has grown so large that no ordinary person can successfully traverse it all. Specialization is thus the result of a naturally evolutionary process, tending to greater refinement and precision in knowledge, as well as in diagnosis and in treatment. To be a specialist of the highest type, however, one must have a broad and deep foundation in general knowledge. This, however, does not imply that a tendency to specialization should not be encouraged early, providing this is not done too exclusively or to the detriment of general training. The view of the specialist should be not less broad than that of the generalist. the only excuse for the existence of the former arising from the fact that in addition to his general knowledge and ability he possess some special knowledge and ability. If, therefore, the medical student, by means of personal preference, personal endowment, or personal opportunity, chooses to devote himself in later life to a special field of medical practice, we think he may wisely devote special attention, even during his medical or collegiate course, to studies in and collateral to that department, not neglecting, we repeat, faithful attention to the other departments. In general, however, it may be stated that it were better for the ordinary student to confine himself to the broader and more general education. Medicine is a somewhat indivisible entity, its subdivision into branches being rather factitious, and no person is a secure practitioner in any one of its parts who has not a fundamental familiarity with all of its parts; therefore, he will be the best specialist who has mastered well the general field of medicine.

Medical News.

CALIFORNIA.

Smallpox is still in evidence in Oakland. Three new cases were discovered on September 27.

Santa Ana Hospital.—A movement is well under way for the establishment of a cottage hospital at Santa Ana, to cost $10,000.

Doctors Must Register.—The Los Angeles city council passed an ordinance September 30, requiring all physicians and surgeons to register at the health office and present the certificate previously obtained from the State Board of Health.

French Hospital Training School.—The French Hospital Association, San Francisco, has approved the proposition to maintain a training school for female nurses with a maximum of 35. It also authorized the expenditure of $17,000 for additions and improvements to the hospital building.

GEORGIA.

The Medical College of Georgia, Augusta, held its seventieth annual opening exercises, October 1. Dr. James M. Hull made the introductory address.

Public Schools Closed.—On account of the prevalence of scarlet fever in Eatonton and in Putnam County, the public school has been closed for one month. The public shools of Rome have been ordered closed for two weeks on account of scarlet fever.

Personal.—Dr. Gustavus G. Roy, Atlanta, will spend the winter in Florida on account of ill health.——Dr. Charles H. Hall has been elected Chairman of the Macon Hospital Medical Board, vice Dr. William F. Holt, deceased.——Dr. Evan Park Howell, Atlanta, has been appointed assistant surgeon in the Army with the rank of first lieutenant. He is now in the Philippines.

ILLINOIS.

New Cottage Hospital.—The new addition to the Peoria Cottage Hospital will be opened for patients, November 1. The attending staff for the year consists of Dr. John D. Miller, president; Dr. Thomas M. McIlvaine, vice-president; Dr. Otho B. Will, secretary; Drs. Paul Dombrowski, Emerson M. Sutton, Robert W. Baker, Robert A. Hanna, Elmer M. Eckard, Frank B. Lucas, Oliver J. Roskoten, Sumner M. Miller, John C. Roberts and Harrison Steele.

Personal.—Dr. Frank R. Pitner, Clay City, who is in his ninetieth year and has been practicing medicine since 1839, has gone to California for the winter.——Dr. Samuel Moore, Danville, has moved to Jamesburg.——Dr. Fred W. Carman, Prophetstown, has sold his practice and will locate in Geneseo.——Dr. Emma Morgan, Aledo, has opened an office in Rock Island.——Dr. E. L. Birch has resigned from the staff of the Illinois Eastern Hospital for the insane and will locate in Robinson.——Dr. Henri S. Babcock, Jamesburg, has located in Danville.——Dr. Frank W. Goodell, Effingham, has been reappointed lecturer on anatomy at the College of Physicians and Surgeons, St. Louis.——Dr. J. A. Guertin, L'Erable, has moved to Clifton.

Chicago.

Dr. E. C. Dudley has resigned the chair of gynecology at Northwestern University Medical School.

Dr. Albert P. Ohlmacher has returned to Chicago and has succeeded to the chair of pathology in Northwestern University Medical School made vacant by the resignation of Dr. Gustav Fütterer.

St. Ann's Hospital for Consumptives.—The cornerstone of St. Ann's Hospital for the treatment of consumptives at North 48th avenue and Division street, will be laid by Bishop Muldoon, October 20. The fund thus far subscribed amounts to $23,118.

Mortality and Morbidity.—The mortality for the week ended October 5, was 419—an annual death rate of 12.41 per 1000. The Health Department still urges care in the use of hydrant water for drinking purposes, as the typhoid fever mortality continues abnormally high. There is a general increase of contagious diseases, but the type of all—and especially of scarlet fever—is mild and the mortality thus far is unusually low.

Cook County Hospital.—Drs. Arthur R. Edwards and James B. Herrick have resigned from the Executive Committee.

The president, Dr. Denslow Lewis, has appointed Dr. E. Fletcher Ingals to represent Rush Medical College, and Dr. Robert B. Preble to represent the Northwestern University Medical School. The Committee elected as chairman, Dr. William E. Quine, who appointed the following subcommittees: Clinical instruction, Drs. Baldwin and Webster; records, Preble and Lewis; morgue, MacKellar and Kearsley; admission and assignments of patients, Lewis and Swan; internes and nurses, Ingals and MacKellar; laboratory, Kearsley and Baldwin; the chairman, ex-officio member of all committees.

Resolutions in Memory of Dr. Jones.—The medical staff of St. Luke's Hospital, at a meeting held October 3, passed the following resolutions in memory of the late Dr. Samuel J. Jones: Resolved, That the medical staff of St. Luke's Hospital have heard with deep regret of the death of their confrère, Dr. Samuel J. Jones. They especially desire to acknowledge his long and faithful services to the Hospital, both as attending and consulting ophthalmic and aural surgeon, and to place on record their appreciation of his devotion to the best interests of the institution. Be it further resolved, That the members of the staff attend the funeral of Dr. Jones in a body, and that copies of these resolutions be forwarded to his nearest relative and supplied to the medical press.

INDIANA.

Smallpox in virulent form has broken out in Michigan City. Four cases had been reported up to October 3, with one death.

Anti-Expectoration in Logansport.—The city council passed an ordinance October 2, prohibiting expectorating on the sidewalks of the city.

Epworth Hospital.—The new Epworth Hospital, South Bend, was opened for patients October 7. It is a fireproof, three-story brick and stone building and was erected at a cost of about $70,000.

Personal.—Dr. James A. Turner, Martinsville, has moved to Nashville.——Dr. William E. Kessinger, Worthington, has returned to Sandborn.——Dr. Edwin M. Trook, Marion, now serving in the Philippines, has been promoted to captain and assistant surgeon, U. S. Volunteers.

Osteopaths to be Prosecuted.—The State Board of Medical Examination decided September 24 that all osteopaths who have not applied for licenses by November 1, or those who have applied and been refused licenses and are still practicing, will be prosecuted. The board granted licenses to twenty-nine osteopaths and refused five.

MAINE.

Bar Harbor Hospital trustees, at their annual meeting, decided to take steps to enlarge the hospital, and appointed Dr. R. S. Dorsett, pathologist.

Personal.—Dr. E. O. Challis has moved from Woodfords to Gorham.——Dr. Goodspeed has moved to Fairfield and will office with Dr. Ivory P. Tash.——Dr. Charles S. Knight, Bangor, has located in Woodfords.

New Licensees.—At a special session of the State Board of Examination and Registration, held in Portland, August 1, Dr. Robert Abbe, New York, and four other applicants passed their examination and were granted licenses.

MARYLAND.

Baltimore.

The College of Physicians and Surgeons opened September 30 with an introductory lecture by Prof. William F. Lockwood.

The new infectious diseases hospital will have four separate buildings; an administration building, one for scarlet fever, one for measles and the fourth for diphtheria.

Maryland Medical College.—Dr. W. McLean Yost has been appointed associate professor of materia medica and clinical diagnosis and Dr. P. Eugene Craig associate professor of diseases of children. This school is reported to have begun its its session with 106 matriculates.

Class Meetings.—The first weekly meeting of the fourth-year class of the Johns Hopkins Medical School was held at Dr. Osler's residence October 5. At these meetings, which were inaugurated by Dr. Osler, the members of the class report cases seen and studied in the hospital and patient department.

Woman's Medical College Changes.—The following changes have been made in the faculty of Woman's Medical College, Baltimore: Henry P. Hynson, Ph.G., has been elected to the chair of pharmacy, with H. A. B. Dunning, Ph.G., as assistant: Dr. Frances A. Carpenter has been appointed lecturer on embryology; Dr. W. S. Skillman, lecturer on diseases of the stomach; Dr. Louise Erich, lecturer on orthopedics, and Dr. Henry W. Kennard, demonstrator in anatomy.

City Hospital Staff Changes.—Drs. Louis Stick, Louis J. Rosenthal and Albert Conrey of the staff of the Baltimore City Hospital, have resigned on account of disagreement with the faculty of the College of Physicians and Surgeons, regarding the regulation of the hospital. Dr. F. M. Owens has been appointed resident physician; Drs. Frank T. Marr, J. C. Sullivan, H. B. Jester, and E. T. West, have been advanced; and Dr. W. E. Smith has been appointed a member of the house staff.

Personal.—Drs. Francis T. Miles and L. Wardlaw Miles have returned after spending several months in Europe.——Dr. John Ruhrah, who has been spending the last 18 months in special studies in Vienna, Berlin, Paris and London, has returned and will take part in the instruction at the College of Physicians and Surgeons this winter.——Dr. Henry B. Thomas has returned from the Blue Ridge Mountains.——Dr. Henry M. Hurd, Superintendent of the Johns Hopkins Hospital, has returned from a trip to Nova Scotia, Buffalo and the North.——Dr. A. V. Cherbonnier, U. S. Army, is convalescing at the Presbyterian Eye, Ear and Throat Hospital from an operation on his right eye.——Dr. J. A. Gale, Roanoke, Va., is at the Johns Hopkins Hospital with septic poisoning due to infection of the third finger of the left hand, while performing an operation about three months ago.——Dr. Osler during the summer visited Amsterdam and there ordered a large number of books, including some valuable editions of medical classics, for the library of the Medical and Chirurgical Faculty.

MASSACHUSETTS.

Dr. Octavius T. Howe, Lawrence, who has been district medical examiner for seventeen years, has resigned.

Diphtheria is increasing in Lowell to an alarming extent. Seven cases were reported to the health board, October 1.

The Albert Bowman Wood Surgery, which is to be erected at Memorial Hospital, Worcester, by Mrs. Wood, is to be a two-story building, 47 by 60 feet, with two operating rooms and all modern appliances. The building is to cost $20,000.

Personal.—Dr. T. H. Grady, Clinton, is about to locate at Maynard.——Dr. Joel Boyer, Oatdale, has moved to Easthampton.——Dr. J. Frank Hall, Lowell, has passed the Army Medical Board examination and has been commissioned first lieutenant and assistant surgeon, U. S. Army.——Dr. Hiram H. Burns, Athol, has sold his practice to Dr. Oliver A. T. Swain, Washington, D. C.

MICHIGAN.

Smallpox is reported from Shiawassee County. The patient is a school teacher who, although ill, continued to teach for several days.

Dr. Beverly D. Harison, Sault Ste. Marie, has been appointed a member of the State Board of Registration in medicine for a term of four years from October 1.

Personal.—Dr. Henry B. Landon, Bay City, has been reappointed a member of the State Medical Board.——Dr. A. A. Spoor has decided to locate in Bay Rapids.

New Medical Building.—The cornerstone of the new Medical building of the University of Michigan, Ann Arbor, will be laid October 15. Dr. John A. McCorkle, Brooklyn, of the class of 1873, will deliver the address.

MINNESOTA.

State Examination.—At the examination for license to practice medicine in the state, held in St. Paul, October 1, 2 and 3, 26 candidates appeared, 3 of whom were women.

Hospitals to be Built.—Building permits have been issued for the completion of the Swedish Hospital, Minneapolis, to cost $35,000, and for the third story of the contagious disease building at the Minneapolis City Hospital, to cost $5000.

Personal.—Dr. Paul D. Cook has been appointed assistant police surgeon of St. Paul, vice Dr. W. G. Richeson, term expired.——Dr. James P. Davis has moved from Millville to Kellogg.—Dr. H. C. Stuhr, St. Paul, has located in Crookston.

Diphtheria.—Health Commissioner Hall, of Minneapolis, blames the local profession for the fact that there are now 400 cases of diphtheria in the city. He says there are dozens of physicians who never send for culture tubes, and ignore the law compelling them to report contagious cases. Malignant diphtheria is said to be raging north of Preston.

Smallpox and Vaccination.—At White Earth Reservation, no Indian is allowed to receive his fall payment until he has been vaccinated.——Strict quarantine is maintained at Mille Lacs by the Indian police.——Dr. Henry M. Bracken, Minneapolis, of the State Board of Health, says that it would be easy to stamp out contagious diseases if there were no railways. He has written to the State Superintendent of Public Instruction, remonstrating against his position that school authorities can not exclude from school children that have not been vaccinated unless an epidemic of smallpox is prevalent or threatened. He holds that there is practically an epidemic of smallpox in the state and that vaccination should be compulsory. He cites that 6288 cases of smallpox were reported up to August 12, since the disease appeared in the state, and that 122 new cases were reported during the last fortnight.

MISSOURI.

Personal.—Dr. P. H. Stultz, Cedar Canon, has located in Pawnee, Okla.——Dr. Owen P. Farrington has moved from Springfield to Louisiana.

Leper and Nurse Isolated.—Dong Gong, the Chinese leper, of St. Louis, and Dr. Louis Knapp, his volunteer nurse, have been installed in the isolated house built for them near the isolation hospital.

Scarlet fever is prevalent to an unprecedented extent in Kansas City, and the city physician, George O. Coffin, says physicians aid the spread of the disease by not reporting cases to the Health Department. He promises to have derelictions of this kind severely dealt with in the future.

MONTANA.

State Examination.—The State Board of Medical Examiners met at Helena, October 1 and 2, and examined 27 candidates, including one woman and two Chinamen.

Sanitary Rules.—The Fergus County Board of Health has adopted a sanitary code which provides for location and cleansing of vaults; disposal of offal; prohibition of sale of diseased food; compulsory vaccination of school children; closing and disinfection of schools when cases of infectious disease occur; report to the Board of cases of contagious diseases; prohibition of public funerals in case of contagious disease, and closure of schools during epidemics.

New Hospitals.—The National Croatian Society expects to build a hospital in Anaconda to cost $20,000. The society has 20,000 members in Montana.——St. Luke's Hospital, Livingston, will be opened November 1. The additions to St. John's Hospital, Helena, are nearly completed and it is expected that the institution will be ready to receive patients, November 1.——Helena architects have been invited to submit competitive plans for the new St. Peter's Hospital to be erected at a cost of $45,000.

NEW MEXICO.

St. Joseph's Hospital.—An institution fully equipped for the treatment of tuberculous invalids has been established at Silver City under the care of the Sisters of Mercy. Dr. Earl S. Bullock, formerly pathologist and physical diagnostician, U. S. General Hospital for Tuberculosis, Fort Bayard, is medical director, and the consulting physicians are Major Daniel M. Appel, Surgeon U. S. A., Commanding U. S. General Hospital, Fort Bayard, N. M., and Drs. Will T. Williams, E. L. Woods, and Samuel M. Lane, Silver City.

NEW JERSEY.

Passaic General Hospital.—Owing to the failure of the citizens of Passaic to come to the aid of the General Hospital Association, the hospital will be obliged to close Jan. 1, 1902. There are now nearly one hundred patients in the hospital, about two-thirds of whom are free.

Endorsement of State Board.—The State Board of Medical Examiners of Maine has recently followed Delaware and other states in endorsing the certificate of license issued by the New Jersey Board. The effort of the New Jersey Board to extend the limits of interstate reciprocity is meeting with appreciation.

September Examination.—At the September examination of the State Board of Medical Examiners 35 candidates were examined, of whom 8 were rejected, making the percentage of rejections 22.8. Dr. Samuel Henry Sulouff, of Christ Hospital, Jersey City, graduate of the University of Pennsylvania, attained the highest average of any during the year.

Medical Inspection of Schools.—The Newark Board of Education has provided for a daily medical inspection of schools. The city has been divided into twelve districts and the medical inspectors appointed are Drs. Rudolph Braun, G. L. Warren, S. Schaeler, Winfield S. De Vausney, Frank S. Gordon, Carl H. Wintsch, M. R. Whitenack, Isabel M. Geddes, G. J. Holmes, Max Feldman, H. A. Scheppach and William Bleick.

NEW YORK.

Pest-House Burned.—By order of the local board of health the isolation hospital built at Inwood during the smallpox epidemic has been burned.

The President's Case.—The current number of the *Buffalo Medical Journal* contains a graphic illustrated description of the case of President McKinley. The account of the operation is given by Dr. John Parmenter, who assisted at the operation, and the details of the case are given by Dr. N. W. Wilson, who was the recorder at the operation.

Conference of Sanitary Officers.—The first conference of sanitary officers, including local health inspectors and registrars, will be held October 24 and 25, under the auspices of the State Health Department, of which Dr. Daniel Lewis is the head. The conference, which will hereafter be held annually, will be attended by over 1000 health officers. The object of this gathering is to present subjects of practical interest to health authorities by addresses and discussions.

Examination and Counsel of School Children.—The Board of Health of Syracuse, N. Y., in connection with the school officials, has decided that hereafter every pupil in the city schools shall receive a medical examination monthly, as to general health, with particular reference to defects of eyesight; this is also to prevent the spread of infectious diseases. The pupils are to be counseled and advised as to the protection of their health, and the wisest methods for the maintenance of good health and the acquisition of a proper physical development.

Personal.—Dr. Richard W. Bamber, Kendall, has disposed of his property, but will not locate at present.——Dr. James C. Comstock, Binghamton, is dangerously ill, the result of an attack of paralysis.——Dr. Robert H. Phelps, Norwich, has been elected a member of the governing board of physicians, St. Luke's Hospital, vice Dr. L. J. Brooks, deceased.——Dr. Guy C. Bayley, superintendent of Vassar Brothers' Hospital, Poughkeepsie, is dangerously ill from septic infection during an operation.——Dr. William Stump, Utica, has moved to New York City.

New York City.

Increase in Typhoid.—All hospitals report an increase in the number of cases of typhoid fever, and the Board of Health reports 122 cases for the week, as compared with 82 in the corresponding week of 1900.

A Progressive City.—The tax critics point out that New York, with a population of about one-quarter of what it is now, had a Board of Health which cost $40,000 a year against its present expenditure of $1,000,000.

Hospital Blameless.—The coroner's jury, after considering the circumstances surrounding the death of John Chrystie, who died in the Insane Pavilion at Bellevue Hospital, June 18, decided that he died from natural causes, and that the hospital authorities were in no measure responsible for his death. At the autopsy it was discovered that his body was bruised and that two ribs had been broken.

St. Luke's Hospital Cancels Consumptive Contract.—The Board of Directors of St. Luke's Hospital adopted the report of a special committee, September 30, recommending the cancellation of a contract now existing between the Hospital and the House of Rest for Consumptives, which some years ago transferred to the hospital its resources with the understanding that the hospital would thereafter care for consumptive patients.

Bequests to Hospitals.—The late John Gray has bequeathed $5000 to Seney Hospital to endow a bed, to be known as the "Sarah Gray Bed."——By the will of the late Mrs. Harriet B. Ranney, $6000 is left to establish a bed for adults and $3000 for a bed for children at St. Luke's Hospital.——The late Susan Miln, after certain bequests, left the residue of her estate to various charities, including the General Memorial Hospital for the Treatment of Cancer and Allied Diseases and the Home for Incurables.——St. Luke's Hospital will receive a substantial sum from the estate of the late Daniel T. Hoag.

OHIO.

Ohio Board Sustained.—The State Board of Medical Registration and Examination has been placed on a firm foundation by a decision of the Supreme Court of the state, which establishes its right to pass on the competency of Ohio medical institutions.

Typhoid in Toledo.—The health officer, Dr. Walter W. Brand, asserts that there is more typhoid fever in Toledo than the records show. He has therefore mailed to every physician in the city a copy of the rule requiring the report of such cases to the Health Department.

New Doctors Licensed.—At the regular quarterly meeting of the State Board of Medical Registration and Examination, held at Columbus, October 1, sixteen graduates of recognized medical schools of Ohio, who are entitled to exemption from examination under the state board, were granted certificates to practice.

Western Reserve University Medical Department, Cleveland, opened for its annual session, October 2, with about 130 students, the attendance apparently having not been decreased by the increased requirements for admission. The additions to the faculty are Dr. F. C. Waite, Chicago, assistant to the chair of histology and embryology; Dr. Louis W. Ladd, New Haven, Conn., lecturer on clinical microscopy; Dr. H. B. Parker, Baltimore, demonstrator of pathology, and Dr. Roger G. Perkins, Cleveland, lecturer on bacteriology.

Personal.—Dr. Katherine L. Crawford, Toledo, has returned to her home in Ann Arbor.——Dr. John S. Montgomery, Huntsville, was seriously injured in a runaway accident, October 2. ——Dr. Thomas L. Cooksey, Wilmington, has been appointed captain and assistant-surgeon in the National Guard, and assigned to the First Infantry.——Dr. Harry P. Findley has resigned from the staff of the State Hospital, and will practice in Massillon.——Dr. Edward L. Emerich, Wooster, has been appointed on the staff of the State Hospital for the Insane, Massillon.——Dr. George N. Simpson, Warren, has moved to Youngstown.——Captain Jacob R. Welch, assistant-surgeon, O. N. G., Spencerville, has resigned.

Cincinnati.

Dr. Thaddeus A. Reamy entertained the Academy of Medicine at his home in Stockton, October 4.

The annual commencement exercises of the training school for nurses of the Presbyterian Hospital were held October 3. A class of nine was graduated. The annual address was made by Dr. John C. Oliver.

Personal.—Dr. Henry F. Gan, has returned after eighteen months spent in the hospitals of Vienna, Paris and London. ——Dr. Mary E. Cadwallader has been appointed on the staff of the State Hospital for the Insane, Dayton.——Dr. Frank L. Ratterman has sailed for Europe to take up an extended course of study in diseases of the stomach and intestines.——Drs. Burnett Weaver and Dudley Webb have been appointed surgeons to the Cincinnati Traction Company, to succeed Dr. C. S. Muscroft, resigned.

PENNSYLVANIA.

Scarlet fever is prevalent in Homestead.——Typhoid fever is reported to be epidemic in Allegheny.——Diphtheria is so prevalent at McKeesport that the closing of the public schools is being considered.

Personal.—Dr. Michael W. Raub has been reappointed health officer of Lancaster.——Dr. Farnham H. Shaw has located in Wellsboro.——Dr. Arthur C. Wheeler, Erie, has moved to Reynoldsville.——Dr. William L. Grim, West Finley, will move to West Washington, November 1.

Free Hospital for Poor Consumptives.—The colony of consumptives, located under the auspices of this institution at White Haven, now numbers seventeen. The present buildings are a barn and a cottage. Beds are spread on the barn floor and the doors are kept open during the day. Weather paper is being placed on the walls in preparation for the snow, and a hot-water heater will soon be installed to keep out dampness and to modify the temperature about the beds. Nothing, however, is done that will tend to impede the circulation of fresh air. The cottage is used as a dining-hall.

Uniontown Hospital.—A recent news item in The Journal which stated that the Uniontown Hospital Association was building a hospital, and had $5000 subscribed, was partially incorrect, as the State Legislature has appropriated $18,000 for building purposes and $9000 for maintenance for two years. In addition to this, Mr. Josiah V. Thompson has donated two acres of ground, valued at $1000, on which to erect the building, and the citizens of Uniontown and vicinity have already subscribed some $10,000. The trustees are: Hon. Nathaniel Ewing, president; Dr. Thos. N. Eastman, vice-president; Dr. Jacob S. Hackney, secretary; Samuel M. Graham, treasurer, and Hon. Josiah V. Thompson, Hon. A. D. Boyd and O. W. Kennedy.

Philadelphia.

Jefferson Medical College held its opening exercises, October 1. Dr. J. Chalmers Da Costa delivered the opening address.

The Medico-Chirurgical Medical College opened for t session of 1901-1902, October 1. Dr. John C. Heisler delivere an address on the qualities which should be cultivated by t physician.

Contagious Disease.—During September there were 1 cases of smallpox in the city, 234 cases of diphtheria, 15 cases of scarlet fever, 407 cases of typhoid fever and 214 cas of consumption.

Objection to Isolation Hospital.—The plans of the boa of directors of the proposed hospital for contagious disease for which a site was recently purchased at Narberth, have bee abruptly stopped by the authorities of that place.

Registration of Consumptives.—Although six mont have passed since the registration of tuberculosis patients w urged by the medical profession and approved by the Board Health, nothing has been done, because of the Mayor's opp sition.

The new medical laboratory building for the Universit of Pennsylvania will be quadrangular, two stories in heigh above a high basement, and will measure 340 feet front b nearly 200 feet in depth. The first floor of the building wi be devoted to physiology and pharmaco-dynamics, and th second floor will be devoted exclusively to pathology. Th equipment will be adequate.

GENERAL.

Dr. Vincenz Czerny, professor of surgery at the Universit of Heidelberg, is visiting San Francisco, the guest of D Burkan, of that city.

Hospitals in the Philippines.—Surgeon General Georg M. Sternberg, U. S. Army, in a recent interview, expressed th greatest satisfaction over the condition of the hospitals an medical service as he found them in his visit to the islands.

International Quarantine Congress.—Under the patron age of many eminent men abroad, arrangements have been se on foot for assembling an international quarantine congres The movement originates with Assistant Surgeon Frank W Foxworthy, U. S. A., who is at present in Europe. The con gress will attempt to formulate a uniform code of quarantin laws, which shall be the standard for the entire world.

Large Number of Women Studying Medicine i Switzerland.—The women students at Berne outnumber th men by 190 to 174. At Geneva, there are 168 women and 18 men following the medical course. The total number of wome now studying medicine in Switzerland is 511. Mme. Bornstei was recently admitted to the entire privileges of a register physician in Berlin after graduating in Switzerland and Prussia; she was admitted at the same time as her son.

Smallpox Report.—According to the last report of th Marine-Hospital Service, the number of cases of smallpox reported between June 20 and September 20 was 9797, as compared with 3818 during the corresponding period of last year The number of deaths resulting from the cases reported wa but 274, showing a smaller death-rate this year from th scourge. Some states have enjoyed greater freedom from th disease than last year, while a few states make distressingly high reports, notably Pennsylvania, which had 10 cases last year and 1205 this, and New York, which had 7 last year as against 521 this year.

The Death of President McKinley.—The *Progrès Médical* of Paris, speaks with admiration of "the absence of the delays and the distressing indecision, which so often is witnessed at the bedside of persons of prominence. The decision and promptness with which our American confrères complied with the urgent and pressing indication for laparotomy, the clearness and frankness of their bulletins, and also the beautiful fortitude manifested by the unfortunate victim from the moment he was stricken by the assassin to the supreme hour of death." The *Journal de Méd. de Paris* observes: "The only treatment possible was applied in the case of President McKinley, but the bulletins published were most amazingly optimistic. Not only was infection almost certain after such a traumatism, but the symptoms never ceased to be alarming. How was it possible to speak of being out of danger after a laparotomy under such conditions, when the pulse kept at 120 and the temperature between 38 and 39 C.? Either our American confrères were deceived, or for political reasons they wished to reassure public opinion. The report of the autopsy is equally bizarre and inadequate."

CANADA.

Hamilton Medical Society.—This association has passed a resolution urging that an isolation hospital be established in that city. At the next regular meeting of the Society, Dr. Roswell Park, of Buffalo, will contribute a paper on abdominal surgery.

Toronto Senate Elections.—The following members of the Medical Faculty of Toronto University were elected by acclamation at the recent elections for the senate: Mr. Irving H. Cameron, Dr. W. H. B. Aikins, Dr. James M. McCallum and Dr. Adam H. Wright.

Smallpox.—A serious outbreak of smallpox has again broken out at Copper Cliff, near Sudbury, the scene of the extensive epidemic of last spring. The appearance of the disease in that section of Ontario is causing the Provincial Health Department considerable anxiety.

Medical Inspection of Schools.—Some citizens of Toronto are advocating systematic inspection of the public schools by medical practitioners. The Ontario Board of Health has already endorsed this scheme, and the matter will probably now receive more attention.

Victoria Memorial College Hospital, at Revelstroke, had its cornerstone laid on September 29 by the Countess of Minto, who was one of the party conducting the Duke and Duchess of Cornwall on their trip. This hospital is the fourth of its kind organized in western Canada.

Obituary.—Truman W. Duncombe, M.D., Toronto Medical College, 1882, died suddenly at his home in St. Thomas, Ont., October 2, aged 42. He was a prominent and popular practitioner.——Dr. Hugh Bain, Calgary, N. W. T., died, October 2, at his home, aged 49. He was well-known as a prominent practitioner in the Territories.

Effervescent Sodium Phosphate.—The Inland Revenue Department has just published the result of analyses of sixty-four samples of effervescent sodium phosphate. Of this number only thirteen, or 20 per cent., were found to be genuine. The greater number of the adulterated samples have been so characterized as they do not conform to the B. P.

Montreal General Hospital.—Admissions to the wards of the Montreal General Hospital for the month of September numbered 234. The discharges for the same period were 226; the deaths, 14; the daily average of indoor patients, 180. Consultations in the outdoor department numbered 2565. There have been a considerable number of typhoid fever cases.

Appointment of a Special Inspector.—In view of the repeated outbreaks of smallpox in the unorganized townships of northern Ontario, the Provincial Health Department is considering the advisability of appointing a permanent inspector for those districts. The territory extends from the Ottawa River to Rat Portage, twelve hundred miles, and has a population of 100,000.

Toronto Vital Statistics.—In September there were registered in Toronto 339 births, 229 marriages and 253 deaths. During September, 1900, the registrations were: Births, 328; marriages, 187, and deaths, 290. It is said that the registration of births should be much larger as many physicians fail to register these. London's vital statistics for September were as follows: Births, 60; marriages, 66; deaths, 57.

Medical Examinations.—The fall medical examinations were held at Quebec, September 25 and 26. At a meeting of the Board of Governors of the College of Physicians and Surgeons, September 25, the following officers were elected: President, Dr. Lachapelle; vice-presidents, Dr. Wallee, Quebec, and Dr. Craig, Montreal; registrar, Dr. Marsolais, Montreal; treasurer, Dr. Jobin, Quebec, and secretaries, Dr. McDonald, Montreal, and Dr. Paquin, Quebec.

Toronto Clinical Society.—This Society began its 1901-1902 session on the evening of October 3, with the president-elect, Dr. J. F. W. Ross, in the chair. Dr. Bruce presented a hairy tumor, a report of which has already appeared in the columns of The Journal. Dr. A. A. Small showed two interesting cases: One a woman of 40, with a cystic tumor in the left popliteal space, which Dr. Grasett suggested was probably connected with the sheath of a tendon or an enlarged bursa; and a case of polymastia in a woman of 60, who had borne several children. This supposed supernumerary breast was situated just behind the right posterior axillary line and was quite characteristic of a breast, although lactiferous openings could not be defined. It had never enlarged during nursing. The nipple-like tumor had always been present. The opinion was pretty general that the so-called supernumerary breast was a lipoma. Dr. A. A. Macdonald showed a specimen of cystic-adenoma of the breast. He believes in removing the entire breast in such cases.

Toronto Medical Society.—The first regular meeting of this Society was held on the evening of October 3, with the president-elect, Dr. F. N. G. Starr, in the chair. He delivered a very interesting presidential address on eminent members of the profession in Toronto; in days gone by, illustrating this with canvas photographs. Mr. Cameron showed some very interesting calculi extracted from an old man of 76, by high section, some fourteen of these being found in the cul-de-sac, behind the prostate. Dr. Graham Chambers showed a girl of 13 years who had hydro-vacciniforme for ten years. Dr. Primrose and Dr. Chambers showed a young man of 25 with blastomycosis. The two lantern-slide photos shown, exhibited warty tumors on the right malar bone, one on the neck, one on the shoulder and another at the inner canthus of the right eye, which resembled very much an epithelioma. The fungus was readily found under the microscope. Excision and the actual cautery in the hands of Dr. Primrose is effecting a cure.

Opening of the Medical Schools.—The medical department of the Western University at London opened for the winter session, October 1.——Toronto School of Medicine resumed its work on the same date. Professor J. F. W. Ross delivered the opening lecture, taking for his subject, "The Indian Medicine Man." Before a single lecture had been delivered a larger number of freshmen had been enrolled than for any previous year. A demand will probably be made for additional accommodation from the provincial government.——Queen's, at Kingston, opened October 2. New additions have been completed during the summer, at a cost of $10,000. The Reverend Principal Grant, who is confined with a serious illness, sent a message to the assembled students, exhorting them to take up their studies seriously from the outset. He said that hereafter there would be greater pains taken to prevent the graduation of irreverent and half-taught young doctors from Queen's.——Bishop's Medical College also opened during the week, the dean, Dr. F. W. Campbell, delivering the opening lecture. It is only a few years since the standard for medical matriculation was raised in Ontario, but with the increasing influx into medicine, it would appear as though the B.A. standard of matriculation was in the near future.

FOREIGN.

Professor Virchow has had the largest municipal hospital in Berlin named after him, in honor of his coming eightieth birthday. The city has also voted 100,000 marks to the Virchow House, a charitable institution.

Bubonic Plague Threatens.—A rat caught on board an East India liner was found to contain pest bacilli. It is feared that the plague may thus have been carried into France by the escape of other infected rats at various ports.

Smallpox in London.—There were 128 cases of smallpox in the London hospitals, September 30; there are in all 4885 patients in the hospitals. The medical officers are busy revaccinating, and scarlet fever and diphtheria are also causing the Health Department considerable concern.

Honors to the Memory of Chassaignac and Maisonneuve.—During the French Congress of Gynecology which was held at Nantes, the latter part of September, portrait busts of these two famous sons of Nantes were unveiled with appropriate ceremonies, followed by a banquet of the Chassaignac committee and the members of the congress. The busts are in the grounds of the public hospital.

Deaths Abroad.—Our Brazilian exchanges announce the death of A. R. de Alvarenga, President of the Faculty of Medicine at Rio de Janeiro, from 1889 until last February. The titles of Baron and Viscount had been conferred upon him in token of appreciation of his services to the late Emperor, Pedro II, and the Republic has also conferred signal honors upon him. The medical school was closed for the week following his death as a mark of respect to his memory. He was aged 69.——The death of Dr. Cuneo, chief of the Medical Corps of the Navy of

France, occurred at Vichy, September 4.——Dr. Vaucher, professor of obstetrics and gynecology, at Geneva, is dead.

Prevention of Tuberculosis.—The Minister of Public Works of France has sent a circular letter to all railway companies, pointing out the best manner in which to combat the propagation of tuberculosis among their employes. The companies are already very careful, accepting only applicants shown by medical examination to be free from the malady. The future aim will be to give outdoor positions to those who have contracted it since entering the service.——The Prussian School Inspectors are paying particular attention to the prevention of the disease. The Minister of Public Instruction has recently sent to the Department of School Inspection copies of a pamphlet written by an American physician on this subject, with an order to the inspectors to consult with the teachers regarding preventive measures.

PARIS LETTER.

Cigarette Smoking Compared to Cigars.

The Royal Medical Academy of Belgium has published a report by Dr. Kuborn on the use of tobacco, in which the author lays down some principles as to the conditions needed to avoid the noxious effects observed at a certain age. One should avoid damp tobacco, which allows nicotin to escape with the steam without being decomposed. Use tobacco which contains a small amount of nicotin, and do not smoke before meals. Smoke with the help of a cigar or cigarette holder, throw away the last quarter of a cigar and smoke in a well-ventilated room. Cigarettes are the least dangerous form of tobacco.

The Microbe of Dysentery.

Dr. Lesage, physician of the Paris hospitals, who is a well-known bacteriologist, especially in intestinal affections, has just published in the *Presse Medicale* of August 17 a short notice on a microbe of dysentery. An extract of this will be of use as a means of comparing it with what has been recently discovered in the Philippine Islands, and with Shiga's bacillus. Dr. Lemoine was able to examine a large number of cases of dysentery in the service of Dr. Galliot, at Toulon, and he was able to note the following facts: 1. In cases of dysentery from China, Cochinchina, Algeria or Toulon, there is to be found a micro-organism the number of which increases with the progress of the disease and diminishes when convalescence sets in. 2. This parasite is [illegible] a micrococcus or streptococcus, generally [illegible] with equal or unequal grains. In the latter case the micro-organism has the appearance of a balloon with its basket. 3. This microbe is discolored by Gram's method, does not coagulate milk and does not grow on potatoes. 4. It is to be found in the various intestinal products of dysentery, and after death in the veins of the mesentery and the glands of the same order. 5. Injected into the rabbit and guinea-pig, it produces septicemia without intestinal localization. With the cat, however, there is localization on the large intestine, with lesions identical to those observed in man.

New Treatment of Blennorrhagia.

A new treatment for blennorrhagia has been recommended by Dr. de Brun, professor at the Medical Faculty of Bayreuth. It consists in the use of picric acid. A 1 per cent. solution can be used, but is found to be rather painful, so a solution of 0.5 per cent. is usually employed. Only 5 to 6 cubic centimeters should be injected for a few minutes, and this should be repeated two or three times a day. A cure is obtained after four or five days. In chronic forms Dr. de Brun has obtained good results when the disease only existed in the anterior part of the canal. The result of the injection is shown by the change in the coloration of the flow. A bacteriologic examination shows a rapid diminution of the gonococci.

Treatment of Rectal Stenosis.

Dr. Chaput has obtained in quite a number of cases of medullar cocainization anesthesia of the arm and even of the face. Out of 102 observations there were 31 cases of anesthesia of the arm, 4 of the face and 9 of the head in its entirety. At one of the last meetings of the Society of Surgery, the treatment of rectal stenosis was discussed; two observations furnished by Dr. Souligoux and Dr. Walther showed the advantages derived from performing enterotomy in the iliac region, and in the first of the two cases, dilating from above. Later this opening was closed and the patient is supposed to dilate the rectum with catheters used twice a week.

Electricity in Blennorrhagic Arthritis.

Dr. Mathieu, at a recent meeting of the Society of Therapeutics, described the results obtained by the use of electricity in six cas[illegible] rheumatism. These observations had been [illegible] ·elorme, who noted some improvement the day after the first use of the galvanic current. There was diminution of the edema and of the pain. A comparison was established by using on one articulation the galvanic current and on another salicylate of methyl. It was found that articulations treated by salicylate were not affected by the treatment, while those subjected to the electrical treatment were much improved.

Tuffier's Statistics on Appendicitis.

Dr. Tuffier's statistics in the treatment of appendicitis have been recently published in a thesis presented at the Paris Faculty of Medicine. There were 52 cases operated upon during the last eighteen months with the following results:

Six operations for general peritonitis, with 4 deaths; 22 observations of pericecal abscess, 19 immediate operations, with 19 cures; one deferred with subsequent death; another with consequent fistula, and still another was not operated on and died; 8 observations of acute appendicitis, with 7 operations followed by success; in one case the operation was deferred and the patient died before being operated upon; 16 patients were operated on sometime after their attack and all recovered.

According to Dr. Dubarry, who is the author of this thesis, the opinion of Professor Dieulafoy that the only treatment of appendicitis is to be found in surgery, is correct, and peritonitis, abscesses or acute attacks of appendicitis should be operated upon.

Correspondence.

A McKinley Memorial.

New York, October 7, 1901.

To the Editor:—During the past week some lay and some medical journals announced that it was intended to erect in Washington a McKinley Hospital in honor of our late beloved President.

Beautiful as this idea may be, I believe that a little memorial hospital, located in Washington, is not a great enough tribute to a nation's president such as was William McKinley. Furthermore, while I would not wish to say that there is no room for a hospital for the treatment of general diseases in Washington, I know that there is no urgent need for it. On the other hand, I know, and all physicians and charity workers of our large eastern and western cities will bear me out when I say that there is a crying and urgent need of a sanatorium, or rather several sanatoria where the many little scrofulous and tuberculous children of poor parents could receive treatment, care and the necessary education. France, Germany, Holland, Italy, and the Scandinavian countries, all have numerous seaside sanatoria where the little sufferers afflicted with the above-mentioned diseases receive care. The seacoast climates, combined with proper sanatorium treatment, seem to produce really wonderful results in scrofulous and tuberculous children. The reports of some of the European seaside sanatoria state an average of 75 per cent. of cures.

We in America have, with the exception of one or two small children's hospitals and a few floating hospitals during the summer months, no such institutions. In an address delivered at the recent Congress on Tuberculosis in London, I said that in our eagerness to take care of the consumptive adult we should not forget the little sufferers afflicted with the same or other tuberculous diseases. To treat the scrofulous or tuberculous child—scrofulosis being only a milder form of tuberculosis—or to prevent a child with a hereditary tendency from developing consumption or any other form of tuberculous disease, means the saving of a life and the preservation of a perhaps very useful future citizen.

To realize the urgent need of seaside sanatoria for children one must have visited the crowded tenement districts of our great cities and seen the large number of scrofulous and tuberculous children there, and the many who bear on their pale little faces the stamp of candidates for consumption—pulmonary tuberculosis.

There are already laws in some states prohibiting the tuberculous child from attending public school; but so far as I know none of these states have provided other places where children suffering from a chronic communicable, but also curable disease, can receive the education to which they are entitled, much less where they could have a chance of being cured from their affliction. The results obtained in some of our American sanatoria for the treatment of tuberculous adults are as good as any of those obtained in European institutions. The preventive measures inaugurated by our New York Board of Health have not only served as models for other American cities, but have been imitated by many European municipalities and found to be the most practical and efficacious. We have already a number of sanatoria for the treatment of the consumptive poor adults, though by no means enough of them. However, in nearly every state of the Union the question of providing institutions for adult tuberculous patients with little or no means is now being agitated. Only for the countless little ones suffering from the same or other tuberculous diseases there is nothing done.

Our martyred President had two children, and these he lost. He dearly loved little children, and the creation of a sanatorium for the treatment and prevention of a disease with which so many American children are afflicted, would surely be a fitting memorial to this great man and lover of children. "McKinley Sanatorium for the Treatment and Prevention of Tuberculous Diseases in Children" should be the name of such an institution.

The meaning of the name William McKinley, written on the portals of these houses of hope for many a suffering mother's heart, will be made clear to these little inmates by their teachers and grown-up friends. The word McKinley will embody to these little sufferers all that is needed to make them good patients, obedient scholars, noble men and women, true American citizens. McKinley's fortitude during the last days of his life must teach them what all patients need: Trust in God, confidence in their physician, patience. His words of forgiveness to the very man who slew him must show these little children the sublimity and nobleness of his character. McKinley's life as a man, citizen, patriot, and president embodied all that is truly American. A better example to teach our children the meaning of true manhood and true patriotism we can not find.

Let all American men and women who can afford it contribute through their children, or through their children friends, toward the realization of this McKinley Sanatorium.

In letting the children of parents of means who are happy and well, bring their mites toward a movement of this kind a lesson of charity and patriotism may be taught to them as well. There will be found in every community responsible and patriotic citizens to take this matter in hand and bring it to a successful issue. Let each state contribute enough to have its own pavilion to which to send its children. Let the Atlantic and Pacific coast be lined with such institutions, one or two pavilions for each state, according to its needs. Let good schools be attached to each sanatorium so that the intellectual development of the children may not suffer.

There exists in the North Sea, or German Ocean, on the island called Norderney, a beautiful flourishing sanatorium for the treatment of tuberculous children. Its name is "Kaiser Friederich Hospiz," and it was erected in memory of that unfortunate emperor, Frederick the Third, whom the German people so fondly call "Frederick the Noble." In the fortitude of this beloved sovereign, in his patience, in his martyrdom, in his love for the people, in his ideas and ideals of what should constitute a free and just nation, there is a great similarity to our beloved McKinley.

We, too, may call our martyred ruler "the Noble," and to his memory erect a memorial of practical utility. Let us build an institution where the lives of American children can be saved, to be sent forth in health and vigor to their respective communities, and to help finish the work for which McKinley lived and died; to make the American nation the greatest, the noblest, the foremost of the world. S. A. Knopf, M.D.

Married.

Arthur Allen Libby, M.D., Boston, Mass., to Miss Florence Hunt, Reading, Mass., October 3.

Martin L. Hindley, M.D., Monroeville, Ohio, to Miss Myrtie Morrow, Martel, Ohio, October 2.

Christian Storz, M.D., to Miss Pauline C. Lotterer, both of Toledo, Ohio, at Delphos, Ohio, September 25.

Dr. Albert S. Horton, M.D., to Miss Josephine Lulu Dwyer, both of Baltimore, at Hampton, Va., September 25.

Cornelius F. McCarthy, M.D., Batavia, N. Y., to Miss Georgiana A. Merrill, Byron, N. Y., at Watkins, N. Y., September 25.

Frederick Allport Dale, M.D., assistant surgeon U. S. Army, Aparri, Philippine Islands, to Miss Caroline Maude Kern, Philadelphia, Pa., September 4.

Deaths and Obituaries

Samuel J. Jones, M.D., University of Pennsylvania, 1860, a member of the American Medical Association, died from pneumonia, after an illness of less than a week, October 4, aged 65. He was born in Bainbridge, Pa., in 1836, the son of a physician. He received his education at Dickinson College. He served throughout the Civil war as a medical officer in the U. S. Navy. In 1868, he resigned from the navy and settled in Chicago, making a specialty of diseases of the eye and ear. From 1870 to 1897 he was professor of ophthalmology and otology at the Chicago Medical College, and for many years was surgeon to the eye and ear department of St. Luke's Hospital, Mercy Hospital and the South Side Dispensary. For the last two years, since his retirement from active practice, he had been conducting an active propaganda against street noises, to which he had always been particularly sensitive. He was for several years editor of the *Chicago Medical Journal and Examiner*.

Aaron Cornish, M.D., Castleton (Vt.) Medical College, 1855, died at his residence in New Bedford, Mass., after a lingering illness, September 26, aged 68. He was a native of Plymouth, studied medicine first at Albany, completing his course at Castleton. He first practiced in Boonville, N. Y., and, at the outbreak of the Civil war, he became surgeon of the Ninety-Seventh New York Infantry, and served until 1863, when he succeeded to the practice of his uncle, Dr. Aaron Cornish, Sr., New Bedford.

Daniel E. Thayer, M.D., Chicago Medical College, 1871, died at a sanatorium in Winchendon, Mass., September 29, aged 58. His death was due to nervous trouble, the result of injuries received in a runaway accident several months ago. After his graduation he practiced in Virginia for seven years, then at Cheshire, Mass., for ten years and afterward made his home at Adams. He had served in the Legislature and was prominent in the local and state medical societies.

Richard H. Whitfield, M.D., University of Pennsylvania, 1853, a prominent citizen and physician of Meridian, Miss., died at his home in that city after an illness of four months, September 30, aged 71. He represented Lauderdale County in the Legislature and served as surgeon in the Confederate army during the siege of Vicksburg, where he had charge of one of the hospitals.

George Shivel, M.D., Jefferson Medical College, 1851, a retired practitioner of Philadelphia, died in the Municipal Hospital in that city from smallpox, September 29, after an illness of one week. During the Civil war he became well known from his connection with the military hospitals.

Rev. James Bryan Purcell, M.D., University of Maryland, Baltimore, 1866, of St. Barnabas P. E. Church, Sykesville, Carroll County, Md., died there September 24, aged 59. He was a native of Dublin, Ireland, and served for a time as Acting Assistant-Surgeon, U. S. Army.

Robert M. C. Hill, M.D., New York University, 1860, a practitioner of Mount Meigs, Ala., and who was a native of

Montgomery County, died at his home, September 20, aged 63. He was a surgeon in the Confederate service during the Civil war.

Francis E. Hines, M.D., Harvard University, Boston, 1879, a resident of Salem since that time, for 12 years a member of the School Board and at one time a member of the Legislature, died at his home in Salem, September 30.

Preston Fisher, M.D., Jefferson Medical College, Philadelphia, 1851, died at Boston, September 23, aged 72. He practiced for many years at Orono, Foxcroft, Maine, but of late years had resided in Jamaica Plain, Mass.

James W. Graves, M.D., Trinity Medical College, Toronto, 1866, one of the best-known practitioners in the thumb of Michigan, died at his home in Caro, from hemorrhage from the stomach, September 28, aged 68.

Nathaniel P. Wright, M.D., University of Louisville, 1876, a prominent physician of Lowry City, Mo., died at his home in that place from gastric ulcer, after an illness of several months, September 30, aged 53.

Abram Litton, a pioneer chemist and scientist of St. Louis, for half a century professor of chemistry in Washington University, and St. Louis Medical College, died at his home in St. Louis, September 22, aged 87.

Frank C. Cullen, M.D., Rush Medical College, 1887, died at his residence in Chicago, September 29, from typhoid fever, after an illness of two weeks. He was at one time registrar of Cook County Hospital.

Job S. Wallace, M.D., Northwestern Medical College, St. Joseph, Mo., 1889, a member of the American Medical Association, died from the effects of morphin, taken with suicidal intent, September 28.

Andrew J. Rogan, M.D., Albany Medical College, who practiced in South Shaftsbury and North Bennington, Vt., died in Colorado, where he had gone for his health eighteen months ago.

Elisha O. Mannakee, M.D., University of Louisville, Ky., 1866, for nearly thirty years a resident and practitioner of Washington, D. C., died at his home in that city, September 23.

John S. McNutt, M.D., Cincinnati College of Medicine and Surgery, 1867, for thirty years a practitioner of Philadelphia, died at his home in that city, September 28.

James Walter Dunphy, M.D., College of Physicians and Surgeons, New York, 1895, died at the home of his parents in New York City, October 1, aged 26.

Albert V. Benedict, M.D., Rush Medical College, Chicago, 1881, a practitioner of Portal, N. Dak., died from diabetes, at Braidentown, Fla., September 15.

McPherson Barnitz, M.D., Tulane University, New Orleans, La., 1899, died from heart disease at his home in San Antonia, Texas, September 23.

Percy J. Shute, M.D., College of Physicians and Surgeons, New York, 1896, died from nephritis, at his home in Jeffersonville, N. Y., September 29.

Albert L. Wagner, M.D., College of Physicians and Surgeons, Chicago, 1885, died at his home in La Paz, Ind., September 28, aged 41.

Direct Medicinal Injections in Lungs.—The *Union Med. du Nord-Est* of July 30, contains a communication from G. Rosenthal, describing the great benefit to be derived from direct injection of medicinal substances into the trachea, just below the cricoid cartilage, the patient's head being bent slightly forward. There is no coughing nor any kind of spasm, and the fluid can be injected as slowly as is desired. He uses a needle, as for hypodermic injection, connected by a rubber tube, with the receptacle holding the medicated solution. Absorption through the lungs proceeds as rapidly as through the veins, he asserts, and the lung tissue can thus be directly influenced. He sometimes leaves the needle in place for a week at a time, renewing the injection each day, and afterward inserting a stopper and fastening it in place with collodion.

Testimonial Banquet in Honor of
Dr. Nathan Smith Davis.

A testimonial banquet was given to Dr. N. S. Davis, the Father of the American Medical Association, Nestor of the medical profession, first editor of this journal, and founder of the Mercy Hospital, at the Auditorium Hotel, Oct. 5, 1901, under the auspices of the Chicago Medical Society.

The event was a grand success. Approximately three hundred and fifty physicians from Chicago and various parts of the country attended the feast. The gathering was a representative one and typified in a striking manner the high esteem in which Dr. Davis is held by the profession. Cities outside of Chicago were well represented. The tables were tastefully decorated with flowers. The speeches were timely, replete with good thoughts, characterized by zest, and interspersed with wit and humor. The reminiscences about Dr. Davis were fraught with interest, and their recital by Drs. Andrews, Waxham, Hollister and Bridge created amusement.

Dr. Davis sat between Drs. Fenger and Billings, the one, the highest embodiment of modern surgical pathology, the other, representing all that is progressive and modern in internal medicine. After the banquet Dr. Christian Fenger, president of the Chicago Medical Society, rapped for order, and introduced Dr. James H. Stowell, who said that the members of the profession had assembled to pay their respects to one of the greatest examples of professional honor and dignity in the medical profession. He said it was unnecessary to call attention to the many eminent pupils that had been sent out under the instruction of the distinguished guest. The Deans of three of the largest medical colleges in Chicago were pupils of Dr. Davis. Throughout the country graduates from the Chicago Medical College were occupying positions of eminence, and among them were Drs. Nicholas Senn, Norman Bridge, Frank Billings, Nathan Smith Davis, Jr., Arthur R. Edwards, Roswell Park, John A. Fordyce, and many others, who had in some way or other been honored by their professional brethren.

The toastmaster of the evening, Dr. Frank Billings, said that to preside at a banquet given in honor of Dr. Davis was an honor second only to that which Dr. Davis was receiving. Dr. Davis did not belong to Chicago alone, but to the whole country. Dr. Davis was a New Yorker by birth, was born Jan. 19, 1817, and graduated in medicine in 1837, when he was not quite 21 years of age, from the College of Physicians and Surgeons of the Western District of New York. He then practiced medicine in Binghamton, N. Y., for about ten years, and, seeking wider fields, or people in a better field seeking him, he went to New York City, where he remained about two years. Then Chicago, always looking for something better, found Dr. Davis there, and invited him to Chicago. He came here in 1849 and taught in Rush Medical College for the next ten years. Not satisfied with the method of teaching at that time, and desiring a different method and a longer course, he, with others, severed his connection with that school and founded the Chicago Medical College in 1859. He said that the history of Dr. Davis was known to all, and it was hardly necessary for him to take time in repeating it. He only desired to say that Dr. Davis had become known throughout the whole country as a medical teacher, as a lever to elevate medical education. Practically, it was due to Dr. Davis that the first steps toward a better method of medical education were taken in America, and it was he and his colleagues who instituted the graded method of instruction in medical schools. The speaker said that Dr. Davis and his colleagues had not received the credit that was due them for this, and that Eastern medical schools had taken the credit, although they had adopted the graded method of instruction afterwards. As a teacher he was eminent. Those who had sat at his feet and had listened to his lectures would remember as long as they lived his graphic description of disease, even in a didactic lecture. When it came to the demonstration of a case, he did not think there was any clinician abroad or in this country who could excel Dr. Davis in the matter of clinical teaching. The work of Dr. Davis was not alone confined to medical teaching, for it was through his efforts that the American Medical Association was founded, and he is called the Father of the American Medical Association. Dr. Davis was the founder of Mercy Hospital. Dr. Davis had been president of the Illinois State Medical Society, of the Chicago Medical Society, of the American Medical Association, and the only American who was ever president of an international medical congress. Dr. Billings then dwelt at length upon some of the chief characteristics of Dr. Davis' life, among which were: "Industry, tenacity of purpose, integrity; progressiveness; liberality, a Christian gentleman."

Dr. Edward F. Wells presented the loving cup to Dr. Davis. He said:

"Honored Sir and Guests: In behalf of the medical profession of Chicago and of the whole country, it is my privilege to present to you this loving cup as a token of the esteem in which you are held by your associates, and as an expression of their appreciation of your valuable labors in the advancement of scientific, practical, academic and social medicine.

"This beautiful cup, of Grecian design, is, in its lines and proportions, a model of simple, vigorous dignity, and was selected as being peculiarly emblematic of your character and career. Engraved upon one side is an excellent likeness of yourself; upon another is the leaf of victory, and beneath it the inscription, *Palmam qui meruit ferat*—let him who has won it bear the palm—and beneath this, 'Pioneer in local and national medical organization, and in graded medical instruction'; and upon the other is this memorial tribute: 'Presented to Nathan Smith Davis, A.M., M.D., LL.D., in recognition of his long and distinguished services to medicine, in its every field of usefulness, by the members of that profession which he has so conspicuously adorned, and to whose shield he has given an added luster.'

"Few possess the creative genius necessary to initiate great forward movements in public affairs, and fewer yet are permitted to see the realization of their lofty conceptions. But you, sir, are singularly fortunate in both these respects; and, now, after these many years, you may stand before the bow of promise, supported, as it is, upon one side by the fathers of medicine, resting upon the adamantine foundations of experience and truth, and upon the other by the moderns, standing upon the broad expanse of experiment and fact, and, looking through, view with satisfaction the fair and boundless plains of the future as they stretch out beyond."

When Dr. Davis arose to make a speech accepting the loving cup, he was greeted with loud and prolonged applause, and three hurrahs were lustily given for the venerable guest. Dr. Davis was visibly affected by the ovation, but spoke in a deliberate manner, as follows: "Mr. Toastmaster, and Fellow Members of the Medical Profession: It is useless for me to say that there are no words at my command by which I can convey my idea of the gratitude that fills my soul at the present time. If there is any particular thing that has guided my course through life, and if I have been able to contribute anything of value that justifies your presence and this most generous exhibition of your kindness and respect to me, it is from a very simple principle of action. At the age of seven years, as a boy who had never been outside of his father's farm, born in a log house, and when still in a log house, I was called to the bedside of my dying mother to receive her last words. I was the youngest of a family of seven children; I was in my seventh year. It made a vivid impression upon my mind. She was a Christian—a reader of the Bible. She said to me that she wished me to be a good boy, to learn to worship God, and to do good to my fellow-men. I promised her I would. Of course, I did not realize the importance or bearing of that promise at that early period of life; but an impression was made upon my mind, and from that day to this the rule of my life has been, that whatever comes up that seems to be important and will improve my fellow-men, my impulse is to do what I can to help it along. (Applause.) That is the whole foundation of it. I refused to undertake anything the results of which would not be beneficial to those around me, whatever it might be. The question was, Would it benefit my fellow-men? If it would, I supported it. I refused, on the other hand, to lay up enmity against any human being, and to-day I stand here and say that I know of no man or woman for whom I have an evil wish, and there is not one to whom I would not extend a helping hand at any moment if they were within my reach and needed it. (Applause.)

"On this principle of action and reading the book that my mother pointed to and taught me to read, there was revealed a habit that in old times the patriarchs often formed a covenant with their God, and in my innocent early boyhood, as I grew on, a proposition was made for me to study medicine. I no sooner began than I formed a covenant with my Creator, that he would guide me, so that I could be qualified to do good to the sick, to alleviate human suffering, and to prolong human life. I dedicated my life to that great leading idea, and from that day to this I have striven to follow in that line.

"It was not long before I stumbled on the fact that the system of medical education was a very ridiculous one, for I went each year to the college and went over the same thing—six lectures a week, and skimmed the whole field in sixteen weeks. I thought that was very queer. I listened to these lectures every day, but studied only three of them. I left the other three for next year to make up. I made my own division. As soon as I graduated and got into practice, in about three years I was a delegate to the New York State Medical Society. The first thing I did was to introduce a series of resolutions that the term of medical education ought to be extended to not less than six months, at least, and the course of instruction should be graded. I was criticised for this, and the resolutions were promptly laid on the table. The gentleman who made the motion to lay the resolutions on the table happened to be a professor in the medical school from which I graduated. There was one man there who seconded the resolutions that were laid on the table. I hunted him out, and had an earnest conversation with him regarding the resolutions, and I said something to the effect that if this was the way they were going to serve any measures that I might bring before the convention, I should not travel by old-fashioned stage coaches from Binghamton to Albany many times to attend an association on such a basis. The professor, who introduced the resolutions, had heard the substance of our conversation, and after he had taken his dinner and the association reconvened, he moved to take the resolutions from off the table. This permitted one hour's discussion, and by means of this discussion we gained time enough to have them referred to a committee and to postpone the resolutions for renewed discussion until the following year. The next year we discussed them again, and the fight was continued until it amounted to this, that we were having a standard of education in New York as high as it was in any other medical college in the United States, and that if we undertook to make a six months' term, graded courses, the only effect would be to send students to Boston on the one hand, and to Philadelphia on the other, and we would benefit nobody. But how were we to get out of this? If one state can not move a peg without the rest, let us have the rest, and a resolution was adopted to have a national meeting of all the institutions for that purpose. The resolution was seconded, and after a minute or two of silence, and a little laughter, it was easy for them to see that Davis did not want to fool away his time, and they said let him work. And so they passed the resolution for a national convention and appointed me chairman of the committee to carry it out. I did carry it out, and the result you know. I do not need to tell you about it; you know it; that is the secret of the story. It was not my planning; it was simply done on the principle of doing right and sticking to the right whenever an opportunity occurs. It is just so in regard to introducing any other thing that I have helped. It is simply the opportunity. I go into it, and I know no other way to accomplish it. I have no contrivance about it. It is simply to do what comes before me, and do it with all my heart. I don't want to make any half-way work of it. Dr. Billings has said that when I took hold of a thing I never let loose. Why should I? My old friend, A. B. Palmer, said once that I had been harping at the same thing for twenty years. My only answer to him was, If it is right and will benefit mankind, harp on it not only twenty, but forty years, until it is done.

"My friends, I don't want to tire you by reciting details. Please accept my most cordial thanks for this demonstration. It will probably be the last time I shall have an opportunity to address you. But if you want to promote harmony, cordiality, advancement; if you want to build up, stop pulling down anybody. Never pull down, but build up, and if your neighbor does not do as you think he ought to do, talk about his good qualities, and let his bad ones go. You will soon establish harmony; you will soon have cordiality; you will have your own heart free, and your conscience will be right before your God. You will have neither enemies here nor hereafter. I know no enemies to-night; I have no enmities; I am satisfied with life.

"I am sometimes lonesome because I so rarely meet one of my early comrades—lonesome because they are gone. But I am going to join them before long. I do not expect to tarry a great while. But I have no care about that. I live so that I am ready each day to go. I have no settlements to make: I have no great fortune to give away; I have got enough for my comforts, enough to clothe and feed me as long as I live. That is all I want. I would not die worth a hundred millions of dollars; I should be afraid I had not done my duty."

Dr. Charles A. L. Reed, of Cincinnati, was then introduced, and responded to the toast, "The American Physician."

Born to carve his name
Upon the highest pinnacle of fame.

Dr. Reed said in part: "It is appropriate that the American physician should be toasted at this festal board, around which are gathered from all parts of the great republic, American physicians who have come to honor one of their most distinguished and venerable living colleagues. To me has been assigned the pleasant task of responding to this toast. That duty would be easily discharged if I were simply to speak of the ideal characteristics of the American physician; for if I were to thus confine my remarks and speak only of birth, of education, of scientific attainments, of the lofty ideals of character, of the exemplification of Christian virtue, it would be necessary for me only to stand mutely in your presence and point to the distinguished guest of the evening. It may, however, be appropriate for us to consider the American physician from a concrete standpoint. If we were to consider him from his starting point, we must recognize the American physician at the time when the American physician was not an American physician. When, in other words, he was a distinct European product, practicing medicine upon the Western Continent. This was true in our Colonial period, but with the birth of nationality, there was also the birth of the American physician and the establishment of the medical school in the United States was an associated incident of the creation of the American physician. But the primitive medical school of America, like the original physician that stood as the type of the faculty of that institution, was largely of exotic origin. We devoted ourselves at that time to the teaching of science as it had been discovered, taught and amplified in foreign countries. English influence was dominant; French influence was pronounced; German influence had no footing at that time in America. But with the succeeding generations, the American physician became an established fact, a product of our schools, and we found him exemplifying, even in that early day, those attributes which have characterized the practitioner of medicine on this Continent—independence of thought, independence

NATHAN SMITH DAVIS, A.M., M.D., LL.D.

of action, yet always in conformity with the overriding, overpowering influence of law, not statutory law, of which there was none, but of those eternal laws that make for good, that make for truth, that make for happiness. But in the carrying out of these fundamental principles the American physician early dethroned personal authority and became an actor upon a scale of independence that has but rarely characterized the profession in other countries. . . . American medicine has added to the great sum of our knowledge. Science has been evolved by those practitioners in the remoter districts and towns. McDowell, in his little village in Kentucky; Sims, in the little town in Alabama; Batty, in the little village in Georgia; Wells, with his anesthesia in the little town of New Haven—all of them far removed from the influence of the schools—brought to the light of humanity those great truths which have done so much to relieve suffering humanity and to prolong human life." After referring to the struggle of physicians in the early days, Dr. Reed concluded as follows: "But little needs to be said for the American physician; from seaboard to seaboard, from lake to gulf, in every hamlet, he ministers to stricken humanity, and let me venture the belief that the American physician in the aggregate, wherever found, is actuated largely by those same motives, by those same deeply-rooted sentiments that Dr. Davis imbibed at the bedside of his dying mother. Let us, therefore, with all honor speak, not egotistically of ourselves, but of that great, typical character that we are constantly endeavoring to emulate, the American physician, than whom there stands before the American public, there stands before the world, no more distinguished or worthy exemplar than Nathan Smith Davis."

(Loud and prolonged applause.)

Dr. Donald Maclean, of Detroit, Mich., responded to the toast, "International Medicine."

For the whole world is a stage—
Let us hear of the acting.

He said he felt it was a great privilege to be present and take part in the exercises of the evening, and to pay his respects to his old and venerable and highly-respected friend, Dr. Davis. (Applause.) The subject of international medicine was one that reminded him of the lines written by one of the profession, Dr. Oliver Wendell Holmes, who said:

"As Life's unending column pours,
Two marshaled hosts are seen—
Two armies on the trampled shores
That Death flows back between.

One marches to the drum-beat's roll,
The wide-mouthed clarion's bray,
And bears upon a crimson scroll,
'Our glory is to slay.'

One moves in silence by the stream,
With sad, yet watchful, eyes,
Calm as the patient planet's gleam
That walks the clouded skies.

Along its front no sabres shine,
No blood-red pennons wave;
Its banner bears the single line,
'Our duty is to save.'"

He thought the above verses represented truly and fairly international medicine. The profession could never repay Dr. Davis, nor individually express their gratitude for what he had done, and we could say with the poet, Burns:

"The bridegroom may forget the bride whom he's to wed;
The monarch may forget his crown;
The mother may forget the child that smiles so sweetly on her knee;
But I remember thee, Glencairn, and all that thou hast done for me."

Reminiscences of Dr. Davis were related by Drs. John H. Hollister, Frank X. Waxham, Norman Bridge, and Edmund Andrews.

The toast, "Western Medicine," was responded to by Dr. Archibald Church, who, among other things, said: "We do not, for a moment, think of Trousseau as hampered by the walls of Paris; nor Sydenham confined by the geography of London; nor Graves hampered by the purlieus of Dublin; nor Flint cooped up in the Island of Manhattan; nor is Davis limited to the confines of the city of Chicago. It is our privilege to-night: it is the privilege of the profession of America—nay, more, it is the privilege of the profession of the entire world—to read in the galaxy of clinical masters the name of Nathan Smith Davis."

(Loud applause.)

Dr. Victor C. Vaughan, of Ann Arbor, Mich., responded to the toast, "Medical Education."

"Knowledge comes, but wisdom lingers."
How, then, can best be told
"The fairy tales of science, and the long
Result of time?"

Medical education in this country, even at its best, is in somewhat a chaotic state. He had heard a great deal about the elective system in medical education, by which the student was allowed to select courses and take them in whatever manner he chose. Most of the leading literary colleges in this country had adopted the elective system; some of the medical colleges had also adopted it. He thought it was in consonance with American ways, namely, that every young man should have his choice, and that the man beginning the study of medicine had more wisdom than the man who taught it. After referring to the advantages and disadvantages of the elective system of medical education, the peroration of Dr. Vaughan was as follows: "Honored and most worthy guest: We come together to-night from near and from afar to give to you some outward token of our honor and esteem, and we have for you, who to-night has been fittingly called the Nestor of American Medicine, the greatest of respect. For more than threescore years you have labored diligently, worthily and successfully in our profession. Your life has been to us both an example and inspiration. To many here to-night and to thousands of others scattered over this broad country you have been a beloved teacher and an admired master. To all of us you have been and are still a respected older brother, and an honored friend. Your words have always fallen upon grateful ears; your deeds have ever been witnessed by approving eyes, and your friendship is cherished in many a loving heart. In our busy administrations to the sick; in our ceaseless search for truth in the laboratory, we seldom have the opportunity of expressing our appreciation for one another. But so great and so helpful has been the service that you have rendered to us, your younger brothers, that to-night we have come, laying aside our daily tasks, to offer to you a tribute of our love and admiration. Life is a mystery which it has not been given to man to solve. We know not whence we came, nor can we name the land to which we journey. But we do know, that he who lends a helping hand to his fellow-men, as we travel along life's dusty and stony pathway, is a benefactor of his race.

"There is a Hindu legend which accounts for the origin of our profession in something like the following manner: An intelligent Indian Prince in the time long ago sought one of the most renowned temples of Buddha, and prostrating himself upon the floor he prayed fervently and said, 'How can I best serve my Maker?' As he lay prostrate on the floor he felt a touch upon his shoulder as light as that of a babe, and he heard a silvery voice, saying, 'Arise!' He arose, and there stood before him a beautiful angel, who said: 'Dost thou serve thy God?' And he replied, 'Yes.' Then, go serve thy fellow-man; administer to the sick, heal the afflicted; help those that are in distress.' And thus the medical profession had its origin. Our worthy guest to-night is almost an ideal of that Indian Prince of whom this legend tells. May he have many worthy successors."

Dr. Hobart A. Hare, of Philadelphia, responded to the toast, "Literary Medicine."

The last discovered fact;
The winnowed grain of thought,
Vividly portrayed in undying characters
By the art Divine.

He said that as he sat at the table this evening he could not help thinking that he, one of the youngest, if not the youngest speaker to-night, should bring from the effete East a graceful tribute of admiration to the honored guest of the evening. He thought it was a triumph for the so-called Western profession, which, after all, was not the Western profession of the United States, for the reason that every portion of this great country had sent by mail or by wire and by personal representation some one who bore a portion at least of the loving cup to Dr. Davis.

Speaking to the toast, "Literary Medicine," he said that there was far more in it than some thought. It enabled the members of the medical profession to compare notes and ideas. It improved the culture of men who wrote articles, and it improved the culture and learning of those, as a rule, who read those articles, but not always. In The Journal of the American Medical Association we had a great exemplar of what literary medicine should be. Literary medicine was in close touch with medical education It taught a large body of medical men to be general practitioners, and not to start out as specialists as soon as they had graduated. A great trouble with the medical profession of to-day is that there are too many men going into specialties because they knew nothing about ordinary medicine. Some one had well said: "I sought Happiness, and she constantly fled before me; weary, I turned to Duty's path, and Happiness sought me." It seemed to the speaker that Dr. Davis was a conspicuous example of that phrase. . . . We honor Dr. Davis because he represents to us professional ethics; because he represents to us duty well done; because he represents to us that greatest of all things, a great teacher; more than this, he carries with him, day by day, the thoughts of the minds and hearts of many more than are assembled here to-night, and he feels in his inner consciousness that he has achieved some things of which not only he is proud, but we are proud, and the American medical profession is proud. And therefore I repeat, as the representative of the so-called effete East, which has gained so much from the brawn and sinew of the mighty West, I come to-night to lay before you in your presence the loving tribute of our Eastern profession.

Dr. Edwin Ricketts, of Cincinnati, after referring to the good qualities of Dr. Davis, expressed the hope that he might yet be spared to see many years.

The last toast was responded to by Dr. Robert H. Babcock, of Chicago, it being, "The Physician in Public Affairs."

"For who is better fitted to study and correct the pathologic body politic?"

The speaker thought it was strange that physicians should be loth to enter politics lest they became defiled thereby, but he held that there was no class of individuals in the community who were so suitable to engage in public affairs as physicians. In the words of the toast, "Who is so suitable to study and correct the pathologic body politic?" Let the physician enter the field of politics, that he may curette away the part that is rotten. There was an ample field for the influence of medical men in a quiet way in political campaigns. We had an example of this in Kentucky, where the physicians throughout the State, by exerting their influence in a quiet way upon the politicians of the State, had rendered it impossible for a quack to practice or to advertise in the State of Kentucky. All honor to the State of Kentucky. He said we had among us some members of the medical profession who were engaged in political matters for the purpose of bringing about proper legislation along the right lines to curtail the so-called practice of medicine by quacks, charlatans, faith-healers, etc. There was ample room for the influence of physicians. But even if the physician had some ambition to hold office, it was right that he should, provided that his motives were pure. Physicians were needed in legislatures, not to support anti-vivisection laws, like Senator Gallinger, but to fight anti-vivisection laws, to fight anti-vaccination laws, and to obtain legislation for the benefit of public health. Perhaps the most brilliant example of the physician in politics is Rudolph Virchow What shall we say of our great American physician, Benjamin Rush? He was not only a great physician, but he was a member of the Continental Congress, and chairman of the committee appointed to consider the expediency of the Declaration of Independence. He had the honor of reporting favorably upon the Declaration, and it is thought that many of the phrases used in the Declaration of Independence emanated from Rush. Had he not won undying renown as a physician, he would have been immortal as a signer of the Declaration of Independence. The speaker said that there had been others and were others to-day who were engaged in public affairs not only with credit to themselves, but with honor to the medical profession, and to the welfare of their State. Some of these occupied comparatively insignificant positions, perhaps, but they were doing good work.

Dr. Babcock, after referring to the good work that had been done by Dr. Davis in public affairs, concluded by saying: "As an alumnus of the old Chicago Medical College, I call on you to rise, and, in that beverage which Dr. Davis loves and has continued to pledge his life, drink to his health."

At this juncture the entire audience arose, put the glasses to their lips, and, after the following sentiment expressed by Dr. Davis, drank to his health: "Here is to pure water, Nature's universal aseptic; it muddles no brain; it begets no anarchy; it sparkles on the dew-drop; it gives peace to the nation; it flows in the river of life, and it flows by the throne of God. Let us take it, not only as guests here, but for the whole profession of America."

The audience then arose and sang "Auld Lang Syne."

Societies.

COMING MEETINGS.

New York State Medical Association, New York City, Oct. 21-24, 1901.

Medical Society of Virginia, Lynchburg, Nov. 5-7, 1901.

Oklahoma Territory Medical Association, Oklahoma City, Nov. 13, 1901.

Southern Surgical and Gynecological Association, Richmond, Va., Nov. 19, 1901.

Mahoning County (Ohio) Medical Association.—At the meeting of this body at Youngstown, September 27, resolutions were passed in memory of Dr. Charles N. Fowler and John Eliot Woodbridge, members of the Society.

American Electro-Therapeutic Association.—This Association, which met at Buffalo, N. Y., September 25 and 26, for its eleventh annual session, elected the following officers: Dr. Frederick H. Morse, Melrose, Mass., president; Drs. Daniel R. Brower, Chicago, and Alfred T. Livingston, Jamestown, N. Y., vice-presidents; Dr. Richard J. Nunn, Savannah, Ga., treasurer, and Dr. George E. Bill, Harrisburg, Pa., secretary.

Muskingum County (Ohio) Medical Society.—This Society held its annual meeting at Zanesville, September 13.—The following officers were elected: Dr. J. C. Crossland, Zanesville, president; Dr. A. Dunn, Stovertown, first vice-president; Dr. G. Warburton, Zanesville, second vice-president; Dr. W. C. Batelman, Zanesville, secretary; Dr. C. E. Drake, Zanesville, treasurer, and Dr. C. U. Hanna, Zanesville, corresponding secretary. The Society voted to give a complimentary banquet, in November, to Dr. Edmund C. Brush, president-elect, Ohio State Medical Society.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Fifty-first Annual Meeting, held in Philadelphia, September 24-26, 1901.

President, Dr. Thomas D. Davis, Pittsburg, in the Chair.

(Continued from page 930).

SECOND DAY, MORNING SESSION.

Delegates from the N. Y. State Association.

The second day of the meeting was opened by the President and called to order at 9:30. Drs. Frederick Holme Wiggin and E. Eliot Harris, delegates from the New York Medical Association, were introduced. Dr. Wiggin said that their medical organization was formed by a federation of the county associations. One feature in the association was the divorcement of executive and scientific work; the former occupied usually the first day of their annual meetings, the latter occupying the remaining days. From an observation of the methods of the Medical Society of the State of Pennsylvania they had changed the publication of their Transactions, making it now a monthly journal rather than annual. The matter of giving polyclinic teaching to smaller county societies, as carried on in the Medical Society of the State of Pennsylvania, was also favorably commented upon. In view of the contemplated publication of a medical directory by the Pennsylvania Society similar to the one issued by the New York Medical Association, Dr. Wiggin said that the Directory had proven to be exceedingly valuable in medical circles, and promised to be successful also financially.

Dr. Harris said that Dr. Wiggin had spoken in accord with his own views, but emphasized the important factor that the county society was the central unit of the organization of the New York State Medical Association.

Dr. Wiggin further expressed the hope that the publication of such directories might suggest to the American Medical Association the publication of a National directory.

The Chairman of the Committee to suggest Changes to the By-laws, Dr. M. Murray Weidman, read the report, which was ordered printed and the Committee continued. Among the proposed changes is the provision for the formation of an executive committee which takes the place of the old Committee on Nominations, and is practically the legislative body of this Society. There is also the proposition for the collection and compilation of a list of all legally classified practitioners within the State.

Address in Medicine.

Dr. John B. Donaldson, of Canonsburg, said the present century's achievements promised to far outstrip the past. Internal scientific medicine with preventive means shall be the work of the medical world. Surgery, the brilliant half sister of Medicine, would go hand in hand with her in the crusade against disease, and that the profession might certainly look for other Jenners to arise who will eliminate many of the fatal but preventable diseases of our day. The hope was expressed that in the great Keystone State of Pennsylvania, the present century might see legislative bodies willing to legislate in the interests of indigent tubercular patients. The relief for these patients was an important field, to his mind, toward which the minds of our philanthropic millionaires might be directed. Ere long he believed that there would be an end to the so-called different schools of medicine, for all would be compelled to practice rational and intelligent medicine.

Dr. J. Dutton Steele, Philadelphia, read a paper on "Gastroptosis and Its Treatment."

Movable Kidneys; Their Effect on the Gastric and Intestinal Functions.

Dr. Boardman Reed, Philadelphia, maintained that nephroptosis was frequently one feature of a general sagging downward of a number of abdominal organs. Movable kidney is confined almost entirely to the female sex and is very prevalent. Prominent symptoms are pain or sensitiveness on pressure over the site of the displaced kidney and certain dyspeptic symptoms and nervous symptoms often result. In the severe cases with much pain complete rest in bed is advised, with later the support of a well-fitting pad and belt with special exercise and cautious massage to the abdominal muscles. Out-of-door air and tonic treatment, etc., are also urged. Where these measures are impracticable, or have failed, nephropexy should be done.

Dr. R. H. Gibbon, Scranton, regarded the application of a pad to a loose kidney a mistake. This had been pointed out by Edebohls, who laid great stress upon the fact of appendicitis having been frequently caused by a loose kidney displaced downward causing interference with the superior mesenteric vein resulting in congestion and inflammation. He believed that surgical treatment was the proper method in the majority of cases. The only external device of value in his opinion was the Cardigan corset, with the lacing reversed, i. e., beginning at the bottom.

Dr. Charles P. Noble said his personal experience had been limited to surgical treatment. When the mobility did not exceed two or three inches he believed the rest cure with general tonic treatment was useful. If the urinary symptoms are negative the case required little attention. Marked symptoms showing congestion of the kidney indicated nephrorrhaphy.

Enteroptosis.

Dr. John G. Clark, Philadelphia, dealt more especially with the mechanical part of the treatment. He felt that in the majority of cases the more conservative plan should be first tried. He had seen cases in which there was a general sagging of the pelvic floor with retrofixation, and in which not infrequently after operation the patient complained of the dragging sensation. He referred to the article by Webster, of Chicago, which he regarded of signal interest. Models were shown illustrative of the abdominal wall muscles looking from the front and from the back and the pathology demonstrated.

Dr. Gibbon, of Scranton, thought the fibrous sheaths of the muscles were at fault rather than the muscle tissue itself.

Report of Cases of Infective or Malignant Endocarditis.

Dr. A. O. J. Kelly, Philadelphia, said that during recent years our ideas concerning the nature of acute endocarditis had undergone considerable modification. Formerly it was customary to distinguish two forms of acute inflammation of the endocardium: one a benign, non-infective process, ending in the recovery of the patient, though usually with permanent damage to the valves affected; the other a malignant destructive infective process running a comparatively short course and ending in the death of the patient. It had long been observed that clinically the differential diagnosis between the two forms is sometimes attended with considerable difficulty. It had been ascertained that all cases of acute endocarditis are associated with, if not due to, bacteria; that the same bacteria are found in cases associated with ulceration as in those that are not, and the necessity for revision and modification of our conception of acute endocarditis became apparent to all. Three factors of diagnostic value were: 1, leucocytosis; 2, bacteriologic examination of the blood; 3, irregular heart murmurs.

Dr. A. E. Roussel referred to three cases of endocarditis occurring in his practice, two of which possessed features resembling those of Dr. Kelly's second case. In a girl of 19 the diagnosis of malignant endocarditis of the ulcerative type was confirmed by death. In many of the cases he thought it might be well to leave off the term "ulcerative" altogether; in many of the cases the tissue changes have gone as far as death without the presence of ulceration. The term "malignant" would seem to cover the ground. On the other hand, this term might be objected to because some of the cases got well; these were a small minority, however. A point of great interest in the second case was the progressive enlargement of the spleen. Leucocytosis was also marked. The third case was of interest in that it followed miscarriage and presented all the symptoms of a profound septicemia. The blood was taken from the vein, and Dr. Roussel emphasized the importance of taking a large amount of blood for examination bacteriologically.

Dr. J. M. Anders spoke of the difficulty in diagnosis in the two forms of endocarditis and emphasized the great importance of studying the cases minutely by the application of the most modern methods. He thought some value should be placed upon the presence of murmurs, even in so-called ulcerative endocarditis. Of more importance was the embolic phenomena. His constant rule was to carefully eliminate all affections simulating ulcerative endocarditis, particularly typhoid fever and the allied diseases.

Dr. James Tyson thought if the process were looked upon as a pyemic one in which the heart valves become the objective point of the bacterial effect the question would be greatly simplified.

A Few Notes on the Salts of Sulpho-Carbolic Acid.

Dr. Edgar Moore Green said that although the sulphocarbolates are supposed by some to be "inert," a few of them seem to be excellent intestinal antiseptics. The sodium, potassium and ammonium salts are those that have been most used by the author. One of the most satisfactory methods of administering the sulpho-carbolates is in pill form with enteric coating, because the drug then reaches the intestine and does its work at the proper place. He advocates sodium sulphocarbolate with acetanilid for the relief of headache associated with deranged digestion. Zinc sulpho-carbolate has been used with advantage in diarrhea.

Primary Abdominal Tuberculosis.

Dr. Lawrence F. Flick, Philadelphia, defined the condition in question as the primary existence of a tubercular colony in some tissue or organ within the abdominal walls. The general belief that tuberculosis began in the lungs was, he said, based upon the common experience that the first recognition of the disease is in the lungs; not until these organs are affected do the classical symptoms occur. The observations of pathologists and surgeons have proven that tuberculosis does frequently occur primarily within the abdomen; in what percentage is yet undetermined. Diagnosis is often impossible, and in this direction surgeons and gynecologists could aid much. Frequent discussions of the subject were urged. The question of treatment is still unsettled; men of the largest experience recommend early surgical intervention. As an alternative to this the building-up treatment is advocated by others.

Dr. Joseph Price said that if the surgeon could see these cases the treatment would be very simple and, as they often had occasion to think, very fortunate. For a number of years he had never refused to open the abdomen for intraperitoneal tuberculosis, whether ovarian, tubal, general, or whatever nature. He considers iodoform abundantly used of great value. The condition of abdominal tuberculosis he considered one which justifies excessive and undue liberty intraperitoneally, and which could be undertaken in no other condition. Iodoform should be used freely and drainage employed, either pelvic or general.

Dr. Mordecai Price expressed his belief that the infection occurred through the lymphatics and the blood, through some disorganization of the digestive tract with the food infected with tuberculosis. He had seen several cases apparently directly traced to the milk product. In diagnosticating intraperitoneal trouble where there was slow emaciation he believed it was the urgent duty of the surgeon to open the patient and investigate.

Dr. James Tyson stated that in the difficult diagnosis the tuberculin test presented an infallible test.

Dr. S. Solis-Cohen said that the use of iodoform in a clinical experience extending over a great many years had convinced him of its value in combating tuberculosis, internal or external. In the internal administration the secret of its efficacy is in the gradually increasing dosage, taking some three or four months to reach a maximum. The question of etiology was important. With the conflicting theories as to the transmission of human and bovine tuberculosis the etiology was unsettled. That human tuberculosis can be transmitted to cattle, or bovine tuberculosis transmitted to man, he thought there was sufficient evidence upon record from careful observations in the clinic and laboratory to make the profession very careful at this time not to give the impression that such transmission is not possible.

Dr. Flick, in closing, stated that the tubercle bacillus could enter the alimentary canal through other sources than food and milk; the bacilli entering the respiratory tract might lodge in the pharynx and be swallowed; these bacilli might be from a consumptive as easily as from food and milk. In the same way the germs could be carried into the bronchial glands, the thoracic duct and into the circulation. He laid special stress upon the value of iodoform and the preparations belonging to the same group.

Election of Officers.

The Nominating Committee made the following nominations, which were elected: President, Dr. F. P. Ball, Lock Haven; first vice-president, Dr. Walter Lathrop, Hazleton; second vice-president, Dr. A. S. Harshberger, Lewistown; third vice-president, Dr. R. W. Stewart, Pittsburg; fourth vice-president, Dr. J. K. Weaver, Norristown; secretary, Dr. C. L. Stevens, Athens; assistant secretary, Dr. W. B. Erdman, Macungie; treasurer, Dr. G. B. Dunmire, Philadelphia.

Dr. G. W. Guthrie, Dr. W. Murray Weidman, Dr. W. S. Foster, and Dr. A. P. Hull were elected Delegates to the House of Delegates of the American Medical Association, to serve for two years. Dr. W. T. Bishop, Dr. John B. Roberts and Dr. H. S. McConnell were elected Delegates to serve for one year. Sixteen Alternates were elected, and it was recommended by the Committee that Dr. William M. Welch, of Philadelphia, should be selected to serve as the fourth delegate to serve for one year, should the Society be entitled to eight delegates.

SECOND DAY—AFTERNOON SESSION.

Address in Hygiene.

Dr. E. B. Borland, Pittsburg, called attention to the need of special hospitals for the care of smallpox, diphtheria and scarlatina patients in population centers above 1000. Improperly prepared food was accounted responsible for much disease and intemperance. The advertisements of patent medicines, medical frauds and shams were accredited with the first suggestions to lives of crime and shame. About 20 per cent. of the commonwealth, it was stated, used normal water; 50 per cent. admissible, and 30 per cent. suspicious or dangerous. Preventive medicine was declared to be as exact a science as clinical medicine.

Histories of Three Accidents in Tapping the Chest.

Dr. J. C. Lange, Pittsburg, reported in detail three cases of accident; the first was one of instant death following the entrance of an aspiring needle through the seventh intercostal space at the posterior axillary line on the left side. The second patient was a man, aged 23, with history of croupous pneumonia two years previous, from which he had failed to regain his former excellent health. A cure was effected, and at the present time, two and one-half years after, there is no sign of thoracic disease, except an appreciable lack of fulness in the subscapular region as compared with the other side, and a difference in expansion of one and one-half inches in favor of the latter. The third case was that of a female, aged 58, with biliary cirrhosis, taken with acute pleuritis of the left side. Restoration to amount of health compatible with the liver lesion ensued, and in about a month she returned to her home in California. Death occurred sixteen months later without any complications of liver disease.

Reforms in Medical Education.

Dr. H. M. Shallenberger, Rochester, stated that the standard of equipment of the average graduate of medicine in the United States for the practice of his profession, is very low compared with the graduates in other departments of science or the polytechnic schools. A few questions and answers from papers submitted by graduates to the State Board of Examiners were given, which exposed blundering incapacity, lack of intelligent comprehension of the subject, bad construction of sentences, faulty spelling, etc., on the part of the student. Two remedies were suggested: 1, a preliminary examination of students, admitting only those who have had an adequate education; and 2, a change in the curriculum, giving a uniform standard in all colleges, embracing a comprehensive course of study and including all collateral branches, with special stress on clinical and bedside instruction.

Dr. E. B. Borland, Pittsburg, emphasized his belief in raising the standard of medical requirements. He believed, too, that the individual ought to be examined to ascertain his fitness for the study of medicine before it was undertaken. He thought the idea of examinations might well extend to members of faculties, and to members of the State Board of Medical Examiners. He was in favor of examining "all the way round, beginning with the student asking admission to the medical school."

Dr. J. C. Bateson, Scranton, was in favor of higher medical education. He believed that it should be general, that every one should be measured by a certain standard in order to practice the healing art, whether christian scientist, faith curist, osteopath, or of whatever sect.

Dr. Henry Bates, Jr., said that the responsibility of the Medical Society of the State of Pennsylvania is great, and not a member should be indifferent to his influence to attain a higher standard of medical education. Commercialism is rife, and permits the admission of men as students who are utterly incapable of comprehending the science of medicine. Defective and chaotic instruction is all too evident.

The Duration of Immunity from Diphtheria Antitoxin.

Dr. Henry D. Jump, Philadelphia, gave as his experience the injection of 500 units when the patient had been exposed. He had thus used the injection of the antitoxin in the cases of twenty children and no accident had occurred. It was his custom to isolate the sick person, disinfect the room, and remove well persons, each being given an immunizing dose. Illustrative cases were cited.

Lay Medical Education.

Dr. E. N. Ritter, Williamsport, believed that the school teachers are sufficiently trained to impart proper instruction to pupils in the lower and intermediate grades, but physicians should be employed to instruct advanced pupils in hygiene, physiology, human anatomy and venereal diseases.

Strength.

Dr. John M. Batten, Downingtown, had reference to a person with healthy organs, consequently a person in perfect health. Such a parent governs the sex of his or her offspring; if the father were strong, the sex of the offspring will be a female; if the strength of the mother prevail, the offspring will be a boy.

The Veriform Appendix.

Dr. Edmund W. Holmes, Philadelphia, presented this paper, with accompanying specimens, which was based mainly upon the examination of 110 adult appendices. He recounted the four varieties of ceca according to Treves, and in the 110 cases, he had found of the first variety; 1 of the second; 96 of the third, and 12 of the fourth. He pointed out the natural tendency of the cecum to swing round the ileo-cecal valve as a pivot, carrying the appendix toward the left. Toward the left, therefore, should search be made for the base; the ileo-cecal valve itself is a valuable landmark in cases of doubt, when the usual band is indistinct, as the appendix may be found close to it or even behind it or without a meso adherent to the postcecal wall. The appendicular artery, he explained, is usually single, running on the edge of the meso, but there may be two or more branches coming directly from the posterior trunk of the ileo-colic, requiring separate ligation. The length of the displacement of the appendix, or mayhap displacement of the cecum and colon en masse, may account for anomalous symptoms. The palpation of the appendix through the abdominal wall may be fallacious, owing to contact of the fingers with the psoas magnus muscle, or to the displacement of the colon, cecum and appendix to the median line.

The Doctor's Fee; Is It Fixed and Definite?

Dr. L. J. Lautenbach said that the doctor's reputation, skill, time consumed, risk incurred, and responsibility assumed influenced the amount of his fee. It is also controlled by the patient's standing, his obedience and the result of the treatment, as well as the general, social and financial condition of the community and the reputation and skill of his brother doctors. One influence in the reduction of the fees of the family doctor was the fact that fraternal societies supply the doctor and medicines to members at a nominal cost. Fees apparently high are usually determined by elements unobserved by the public. It was said that a lawyer or an architect might get fabulous prices, yet should a doctor charge a man $5,000 for saving him from the grave, but few would gratefully pay it. A fair price should be charged in every case, and such fees, if not paid, should be collected.

Therapeutic Notes.

Dr. Linnaeus Fussel, Media, called attention to a few remedies which appeared to him of great value.

Some Respiratory Conditions Dependent Upon Gout and Obesity.

Dr. J. M. Anders, Philadelphia, stated that the abnormal conditions presented by the lungs in obesity has not received the attention it deserves. The symptom dyspnea, so common in the anemic variety of obesity, he attributed largely to mechanical interference with the respiratory function, though muscular and hematologic changes shared in the causation. In the plethoric form of polysarcia the dyspnea is often surprisingly slight. Pain in the subscapular and intrascapular muscles may be acute, and it deserves attention. One patient had described it as a feeling as though the "flesh had grown fast to the bones." The pain may be localized, but commonly extends across the back. Hyperemic bronchitis, with troublesome cough and copious mucoid expectoration, occurring in over-fatness was described. Closely connected with this bronchitis is asthma, due in great part to transient insufficiency of the heart muscles; there is also an asthma in this connection, due to gastric disturbance, particularly seen in patients of gluttonous habits. His tentative conclusions concerning the relation of asthma to polysarcia were: *a.* That asthma occurs in about 5 per cent. of cases of obesity; *b.* That it only occurs in extreme polysarcia; *c,* that there is a gouty state or history in most cases in which true asthma is secondary to obesity; *d,* that about 50 per cent. of the cases are curable by overcoming the causative condition. In conclusion attention was called to chronic bronchitis, associated with latent gout or a lithemic state. For success in the management of the cases, the prime requisite is to include the recognition of the cause under the head of diagnosis so that the line of conduct may be adapted to it—the lithemic state.

A Medical Examination as a Prerequisite to Marriage.

Dr. J. C. Bateson, Scranton, referred to the many thousands of unhappy marriages contracted every year. Instead of regarding these as the natural result of violated physical law, many good people piously criticise the severity of Providence. Hereditary influence is too lightly considered by society. The question has been agitated by the writer since 1895 and he has much satisfaction in the knowledge that the scientific regulation of marriage has been proposed and acted on in several state legislatures. He believed that the only logical and effectual course to uproot this social evil is in the enactment and enforcement of a law requiring all applicants for marriage to pass a medical examination, before an authorized board composed of men and women and containing at least two physicians.

The Diagnosis of Lesions of the Aortic Orifices, with Special Reference to Functional Aortic Insufficiency—Pseudo-Leukemia, with Enlargement of the Liver and Spleen, Due to Lymphatic Tuberculosis—A Case of Typhoid Fever Complicated by Noma, with the Demonstration of Diphtheria Bacilli in the Necrotic Area.

Dr. Joseph Sailer, Philadelphia, in presenting these papers gave a mere outline of the second case. He referred to General Sternberg's investigations in this condition. He had found in all, fifteen cases in which the lymph glands showed peculiar histologic enlargement and tubercle bacilli could be found by the usual staining method. These investigations were not the first, but the most important, in that, here the first systematic effort had been made to prove that pseudo-leukemia of a certain peculiar type was not a blood disease, but an infectious disease, and that the infection was produced by the tubercle bacillus. The number of cases reported is only about thirty in all. In the short space of six months six such cases had come under Dr. Sailer's observation, in four of which it was possible to confirm the diagnosis before death; in two by the autopsy. The general features of the cases were given. In one case the liver was distinctly enlarged for two years and in nearly all cases it was exquisitely tender. The temperature chart exhibited, showed a singular irregularity occurring nowhere else except in chronic pyemia, the cases being differentiated by the absence of leukocytosis. The pathologic changes were given. He called attention to this group of cases, peculiar, because very few had been recorded, but he thought with those who had written upon the subject that they escape recognition because the pathologic changes are not invariably those indicating the existence of tuberculosis and the clinician is probably satisfied with the diagnosis of leukemia or Hodgin's disease.

(To be continued.)

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

Local Treatment in Chronic Prostatitis.

A. H. Leuf, Philadelphia, in *Med. Council,* states that for local treatment of the prostate, those preparations containing iodoform or iodol or ichthyol are efficient pain relievers and reducers of congestion. In diffuse chronic inflammation of the prostate, larger quantities of these drugs may be used per rectum, and, if there is much pain, especially if so severe as to cause loss of sleep, these may be combined with opium and belladonna. The following is recommended by him as giving prompt relief:

℞.	Iodofórmi		
	Ichthyol, āā	ʒii-iv	8-16
	Ext. opii	gr. xii	75
	Ext. belladonnæ	gr. iii	20

M. Ft. suppos. No. xii. Sig.: Insert one into the bowel as often as may be needed to relieve pain.

He further states that counter-irritation may in some cases serve a useful purpose when applied to the perineum and hypogastrium in the form of sinapisms or blisters; however, such procedures should be omitted in the treatment of such conditions in the aged.

Treatment of Malarial Hepatitis.

Lemanski, as noted in *Amer. Med.,* advises the avoidance of *alcohol as of prime importance in the treatment of malarial* hepatitis. Arsenic, quinin and the alkalies are of great service used as follows:

℞.	Sodii cacodylatis	gr. ⅛	008
	Pulv. cinchonæ		
	Sodii bicarb., āā	gr. viii	50

M. Ft. cachet No. i. Sig.: One such, three times a day. He recommends at the same time free purgation and prescribes the following for that purpose:

℞.	Hydrag. chloridi mitis	gr. xii	75
	Pulv. cascaræ		
	Pulv. rhei, āā	gr. ix	55
	Pulv. belladonnæ	gr. i	06

M. Ft. capsulæ No. iii. Sig.: One capsule every fifteen minutes in the morning.

To Check Gastric Fermentation.

The following is recommended by Ewald to prevent the process of fermentation in the stomach:

℞.	Resorcin	gr. lxxv	5
	Bismuthi salicylatis		
	Pulv. rhei rad.		
	Sodii sulph., āā	ʒiiss	10
	Sacch. lactis	ʒiv	15

M. Ft. chart. No. i. Sig.: One half teaspoonful twice daily.

Local Anesthesia in the Ear.

Dr. H. Dupuy, New Orleans, in *Laryngoscope,* recommends the following as an anesthetic for the drumhead in order that a free incision of the membrana tympani may be made:

℞.	Cocainæ	gtt. v-x	30-60
	Alcoholis (pure)	ʒi	4
	Olei amlin	ʒi	4

M. Sig.: Drop a few drops into the ear. This will produce complete anesthesia in a few moments.

Furuncle in the Ear.

Furuncles originating in the aural passage give rise as a rule to excruciating pain and earache. The *Med. Record* publishes the following for local use under such circumstances:

℞.	Zinci oxidi	ʒi	4
	Acidi carbol.	gr. x	66
	Vaselini albi	℥i	32

M. Ft. unguentum. Sig.: Insert a cylindrical tampon of cotton wool, covered with the ointment, into the canal. This tampon should be large enough to produce considerable pressure. The greater the swelling, the greater should be the pressure made by the tampon. The pain is at first severe, but disappears after a few moments; if not, insert smaller tampon. Before tamponing, use antiseptic douche and repeat daily.

The Proper Method of Using Spartein.

S. Solis-Cohen, in *Amer. Med.,* states that spartein occupies *a high place* among cardiac tonics and diuretics. He states, however, that the general practitioner is disappointed many times in its use because of improper dosage and methods of administration. In his *opinion,* in order to obtain the full effect of spartein, especially as a diuretic, it is necessary to begin with rather large and oft-repeated doses. For example, grain one-half to grains two may be given hypodermically every second hour, for three or four doses; after that the drug may be given by the mouth in gradually lessened quantities and at increased intervals, until after three or four days the patient is taking grain one-half three times a day by the mouth, and after a week's time ¼ grain three times a day, with now and then an administration of one or two large doses. In following this method of administration the effect upon pulse, in its tension and frequency, as well as the cardiac force, must be watched closely to avoid overdosing or underdosing. When the patient is not bedridden such large doses are not to be advised; one should then begin with ½ grain four times a day and increase or diminish the dose according to the effect, keeping in mind that the point is to get the patient rapidly under the influence of the drug by the maximum dose tolerated and then prolong the effect by the minimum dose effective.

Tannin and Bromin in Treatment of Pruritus.

Joseph, in *Med. Standard,* states that an ointment containing bromin and tannin is of great service in the treatment of all forms of pruritus. The bromin, according to his statement, is used for its anesthetic properties and the tannin for its astringent effects. He prescribes an ointment composed of bromin 20 per cent. and tannin 40 per cent. He states that the action of this ointment is increased by the alkaline secretion of the skin, without producing any irritation. He uses as a base a 10 to 30 per cent. jelly.

Use of Menthol in Gastritis.

G. E. Campbell, in *St. Paul Med. Jour.,* has used menthol in cases of gastrodynia eructations, distension, cardiac distress and vomiting. He states that the object in such conditions is to neutralize the excessive acidity and relieve the hypersensitiveness of the organ. He recommends, to meet these indications, the following combination:

℞.	Menthol	gr. ⅛ to ii	008-12
	Sodii bicarb.	gr. x-xv	66-1

M. Ft. chart. No. i. Sig.: To be given one-half hour before meals. He recommends the administration of pepsin after meals in some form.

Cocain in Treatment of Pain in Gastric Cancer.

The following combination has been recommended in relieving the pain in cases of carcinoma of the stomach:

℞.	Cocainæ hydrochlor.	gr. ss	03
	Morphinæ hydrochlor.	gr. 1/6	01
	Aq. calcis	℥iii	96

M. Sig.: One coffeespoonful every hour in a tablespoonful of iced milk.

An ice bag may be placed at the epigastrium to aid in relieving the pain.

Treatment of Croupous Pneumonia.

A. Pitzold, in *Deutsches Arch. f. Klin. Med.* states that he has successfully employed quinin in the form of subcutaneous injections for the past three or four years in the treatment of pneumonia. He is of the opinion that it acts as a sort of antitoxin for the poison, as such marked improvement in the general condition of the patient takes place. He used daily injections of seven and a half grains (.5) of the hydrochlorate of quinin. This is the most soluble salt of quinin, being soluble in 34 parts of water.

Sodium Cacodylate in Chorea.

Lannois, in *Rev. de Ther.*, has used sodium cacodylate instead of arsenic in the treatment of three cases of chorea. He used the drug hypodermically, beginning with grain one-third and increasing to grain two-thirds. He reports that all the cases recovered in from one to three weeks.

Treatment of Chronic Rheumatism.

℞.	Acidi arsenosi	gr. iii	12
	Pulv. guaiaci	ʒiii	12
	Pulv. capsici	ʒss	2
	Pil. aloes et myrrhæ	ʒiii	12

M. Ft. pil. No. xx. Sig.: One pill twice daily.

Treatment of Psoriasis.

Morgenstern, as stated in *New York Med. Jour.*, gives the following prescription to be used locally in the treatment of psoriasis:

℞.	Acidi salicylici	gr. xii		75
	Sulphuris precip.	ʒi	4	
	Zinci oxidi			
	Amyli, āā	ʒii	8	
	Vaselini	ʒv	20	

M. Ft. ung. Sig.: To be applied locally once or twice daily.

Treatment of the Toxemia of Pregnancy.

To employ intelligent treatment in the foregoing condition, good judgment and a thorough knowledge of the actions of drugs must be had, especially in those cases where organic disease of the heart is present. The elimination and the eliminating organs must be carefully watched and frequent estimations made of the work done by the kidneys. Marx, in *Med. Rec.*, states that the amount of urea should be estimated often as it is always diminished in true toxemia of pregnancy. He further states that progressive diminution of urea elimination with or without albuminuria is an indication for the induction of premature labor. He recommends as diuretics in such conditions the refrigerant diuretics of the sodium class (not the potassium salts which are too depressing) with an infusion of buchu or triticum. Digitalis is contraindicated because of the digitoxin present, which is a renal irritant. The most valuable drugs are the vasodilators, such as nitroglycerin amyl nitrite and sodium nitrite. As true heart tonics, he prefers spartein and the caffein salts and strychnin, to be used when there is a low tension pulse.

J. C. Webster, Chicago, in those cases in which approaching toxemia demands rapid induction of labor and which are complicated by organic heart lesions—such as a double mitral lesion—uses chloroform as an anesthetic, to which is added a small amount of amyl nitrite. In his opinion the great danger to the patient is in the third stage of labor, and in this stage he orders an inhalation of pearls of amyl nitrite in order to secure the most complete dilatation of the peripheral vessels. Under such circumstances lacerations may be a power for good in relieving pressure by bleeding and no measures should be taken to produce contractions of the uterus, consequently the administration of ergot is non-indicated.

The Use of Ergot After Labor.

The *Lancet-clinic* states that the value of this drug has been overestimated, that it has not stood the claims of its adherents. The question is asked, why use ergot in normal labor when viability of the mother is good and the fundus of the uterus can be felt as a hard firm ball over the symphysis? It is stated by the author of the foregoing that he has used ergot about five times in the last one hundred cases and has practically discarded it on account of its disagreeable taste, its tendency to cause nausea and the unreliability of its action. Its effects are not constant. Many authors claim that it limits the danger to postpartum hemorrhage, diminishes the force of after pains and lessens the tendency to accumulation of putrid material in the uterus and thus lessens the tendency to puerperal infection. Putrid material in the uterus after labor generally means infection contracted at the time of delivery and all the ergot at our command could not do the good that a thorough aseptic washing of the uterine canal would produce.

Treatment of Alcoholism.

Dr. J. L. Howard, in *Med. Council*, recommends the following to be substituted for alcohol in habitual drinkers:

℞.	Tinct. nucis vomicæ	℥ss	16
	Tinct. capsici	℥i	32
	Ext. lupulini flu.	℥iii	96
	Inf. gentianæ comp.	℥iss	48

M. Sig.: One dessertspoonful three or four times daily, well diluted.

Medicolegal.

Fifteen Thousand Dollars for Death of Physician.—The second appellate division of the Supreme Court of New York holds, in the case of Ericius vs. the Brooklyn Heights Railroad Company, that it can not be said that an award of $15,000 damages is excessive, for causing the death, through negligence, of a physician about 50 years old, who was earning in the practice of his profession, $175 a month.

"Serious Illness" in Contract of Life Insurance.—The Supreme Court of South Carolina accepts, in the case of Drakeford vs. the Supreme Conclave, Knights of Damon, of the construction, in a contract of life insurance, of the term "serious illness," used in the application, as meaning something that injures a person permanently—any permanent impairment or material impairment of health, it being said that a sickness might be very bad and very sad, and yet not serious.

Admissibility of Non-Expert Opinion as to Imbecility.—A non-expert witness who has had adequate means of becoming acquainted with the mental state of a person whose sanity is in issue may, no doubt, the Supreme Court of Louisiana says, in the case of State vs. Smith, give his opinion, based upon facts to be stated by him, as to whether such person was insane at the time of a specific occurrence. And it thinks that such an opinion would be admissible, subject to the limitation mentioned, upon the question whether the person inquired about had been insane or had been an imbecile throughout his life. But, without the limitation, it would not be admissible. In other words, the court holds that the opinions of non-expert witnesses as to the imbecility or insanity of the accused are admissible only in connection with testimony as to the facts upon which such opinions are predicated.

Occurrences at Medical Examination as Evidence.—It does not need the citation of authorities, the fourth appellate division of the Supreme Court of New York says, in the personal injury case of Jones vs. the Niagara Junction Railway Company, to show that evidence as to what takes place upon the medical examination of a party as to the injuries which he has received, so far as they are the natural expression of pain or inability to do certain things, is competent. It is quite true, it adds, that to a certain extent these expressions may be feigned, but it is for the jury to say, upon the testimony in the case, whether they are the usual actions of one who is expressing involuntarily the sensation that he feels, and so far as they are simply that they are competent, and their admission does not violate any well-settled rule.

Summoning of Surgeon by Conductor of Wrecking Crew.—The Appellate Court of Illinois, Third District, says, in the case of the Chicago & Alton Railroad Company vs. Davis, that the rule is well settled in this state that where an accident happens to an employe of a railroad company, the local surgeons of the company are not in the vicinity, and the condition of the injured man requires prompt medical attention, that the representative of the company in authority at the time and place of the injury has the right to employ medical assistance. If a doctor is sent for by such representative of the company, and, at his instance, performs professional services for the injured employe, the company will be liable to pay for such service. So, where an employe was badly injured and an emergency for prompt medical aid existed, and the man in supreme authority at the time was the conductor of a wrecking crew, who directed another man to call a doctor, and the latter performed the service in response to such call, the court thinks that the physician had a clear right of recovery for such services in an action against the railroad company.

Powder Marks and Medical Jurisprudence.—It is competent, of course, says the Supreme Court of Alabama, in the murder case of Timothy vs. State, to put in evidence passages from standard medical works pertinent to wounds and personal physical conditions under inquiry. But a passage from a work on medical jurisprudence containing an account of certain experiments made by two third persons with guns at various distances to determine how far from the target the weapon would have to be to leave no powder marks, and the conclusion of the author from such experiments, the court does not consider of that character. It says that it does not pertain to the science of medicine or surgery. Men of those professions are no more competent to make such experiments and draw conclusions therefrom than other men, and their opinions in the premises stand upon the same evidential plane as the opinions of laymen, and are to be received in the same way and under the same circumstances. Such opinions are never admissible unless the persons giving them are shown to be experts, and then by the word of mouth of such experts under oath. Wherefore, the court holds that it was error to permit such an extract from a work on medical jurisprudence to be read in evidence to the jury in this case. It says that it did not appear that the author was an expert on powder marks, nor that the two experimenters referred to were, and, conceding them to have been experts, they were not sworn before the jury. As for the experiments themselves, it is well settled in this court, it says, that, had the two experimenters been sworn on this trial, they would not have been allowed to depose to them.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

Philadelphia Medical Journal, September 28.

1 A New Rectal Fistula Knife, Tenaculum and Hemorrhoidal Clamp. Dwight H. Murray.
2 *The Technic of Major and Minor Amputations. Robert H. Cowan.
3 *Laceration of the Cervix Uteri. Henry D. Beyea.
4 A Report of Two Cases of Lymphangioma. Vertner Kenerson.
5 Thrombosis of the Cavernous Sinus—Double Panophthalmitis of Septic Origin. Edward Jackson.
6 One Morning's Work with Stomach Cases, etc. Boardman Reed.

Medical News (N. Y.), September 28.

7 *A Contribution to the Surgical Relief of Cancer of the Rectum: Revision of the Statistics to Date, with Special Reference to Sacral Extirpation. Frank Le Moyne Hupp.
8 The Problems of Physiology and Pathology. Martin H. Fischer.
9 *Intratracheal Injections in Bronchial and Pulmonary Affections. Willis S. Anderson.
10 Presbyopia; Accommodation; Astigmatism. Norburne B. Jenkins.

American Medicine (Philadelphia). September 28.

11 *The Technic of Cesarean Section. Matthew D. Mann.
12 *Pervic Indications for the Performance of Cesarean Section. J. Whitridge Williams.
13 *Place of Symphysiotomy as Contrasted with Cesarean Section. Chas. Jewett.
14 *Circumstances Which Render the Elective Section Justifiable in the Interest of the Child Alone. Edward Reynolds.
15 *The Hygienic and Mechanical Treatment of Heart Disease. Boardman Reed.

New York Medical Journal, September 28.

16 *The Lane Lectures on the Social Aspects of Dermatology. Malcolm Morris.
17 *The Gonococcus and Its Toxin. J. Rilus Eastman.
18 *A Study of the Temperature, Pulse and Respiration in the Diagnosis and Prognosis of Certain Diseases of the Brain. (Concluded.) J. T. Eskridge.
19 Two Cases of Intestinal Obstruction Diagnosticated by the X-rays. J. Rudis-Jicinsky.
20 *The Abstraction of Calcium Salts from the Mother by the Fetus *a Cause of Osteomalacia* in the Former. Jennie G. Drennan.

Boston Medical and Surgical Journal, September 26.

21 *Problems in Medical Education. Herbert L. Burrell.
22 *Observations on Heart Disease. Robert T. Edes.
23 The Pupil in General Disease. Edwin E. Jack.
24 *Report of Cases from the Second Surgical Service* of the Children's Hospital, Boston. H. L. Burrell, R. W. Lovett and J. E. Goldthwait.
25 *Spermine Crystals in Pus. Edward T. Williams.

Cincinnati Lancet-Clinic, September 28.

26 Dilatation of the Stomach. William E. Risinger.
27 Types of Successful Physicians I Have Known. George J. Monroe.

Medical Record (N. Y.), September 28.

28 *A Matter of Interest in Blood Structure Study. Woodbridge H. Birchmore.
29 Report of a Case of Intracranial Tumor; Operation; Recovery. *William M. Leszynsky* and James H. Glass.
30 Operative Procedure for Tumor of the Brain. James H. Glass.
31 *The Prophylaxis of Tuberculosis. Joseph Kucher.
32 *The Home Management of Epilepsy. Robert H. Porter.
33 *On the Origin of Retroversioflexio Uteri and Its Pathologic Dignity. Samuel W. Bandler.
34 Treatment of Typhoid Fever.. Basil M. Taylor.

St. Louis Medical Review, September 28.

35 *The Progress of Gynecology and Obstetrics. Walter B. Dorsett.

American Practitioner and News (Louisville, Ky.), August 1.

36 *Empyema of the Antrum of Highmore. M. F. Coomes.
37 The Longevity of People of Seventy Years and Over Living in the Valley Below the City of Louisville, Called the Ponds Settlement, Within the Last Half Century. T. B. Greenley.
38 *Surgical Treatment of Inguinal Hernia. J. T. Dunn.
39 Address, Kentucky School of Medicine. H. E. Hutson.

August 15.

40 Stab Wound Followed by Pneumonia; Report of a Case. L. L. Cole.
41 The Better Organization of the Medical Profession in the State of Kentucky. J. Smith.
42 Teething in Infants. R. B. Gilbert.
43 The Diagnosis and Treatment of Typhoid Fever. S. L. Reid.
44 Ergot in Obstetrics. Hugh D. Rodman.

Northwestern Lancet (Minneapolis), September 15.

45 Expert Testimony as Seen by a Newspaper Man. C. S. Bartram.
46 Surgical Anatomy of Fascia. C. A. Erdmann.
47 A Cast of Arthritis Purpura, with Nephritis. Geo. Douglas Head.
48 Early Days of the Hennepin County Medical Society. Edwin Phillips.

Medical Mirror (St. Louis), August.

49 *The Woman of the Tenement and Her Three Great Enemies: Ignorance, Alcoholism, and Tuberculosis. S. A. Knopf.
50 *An Intra-uterine Infection Best Treated by Intra-irrigation. O. D. Fitzgerald.
51 Phenalgin in the Treatment of Neuralgias and Other Painful Affections. A. Campbell White.
52 *Cesarean Section as Method of Treatment for Placenta Previa. Wm. J. Gillette.

Albany Medical Annals, September.

53 Address to the Graduating Class of the Albany Hospital Training School for Nurses. Samuel B. Ward.
54 Acute Ulcerative Endocarditis. Edgar R. Stillman.
55 Notes on Pancreatic Diabetes. Joseph B. Betts.
56 A Case of Diphtheria. Clinical Notes by Charles E. Davis, Bacteriologic Notes by Arthur T. Laird.

Annals of Otology, Rhinology and Laryngology (St. Louis), August.

57 *Chronic Nasopharyngeal Bursitis (Thornwald's Disease). Dunbar Roy.
58 *Traumatic Affections of the Uvula. Seymour Oppenheimer.
59 *A Means of Reducing an Overgrowth of the Intermaxillary Frenum, Permitting the Retention of Two Central Incisors in Close Apposition. Hanau W. Loeb.
60 Inflammation of the Mastoid Process. B. F. Church.
61 Varieties of Cholesteatomata. J. Holinger.
62 *Acute Lacunar Inflammation of the Tonsils. Marshall R. Ward.
63 *Non-Syphilitic Mucous Patches of the Throat. O. Joachim.
64 Diseases of the Upper Air-Passages in Relation to Mental Development. LaFayette Page.
65 Etiology of Nasal Deformities. Wendell C. Phillips.

66 A Case of Angina Epiglottidea Anterior. S. E. Allen.
67 Pharyngomycosis. Arthur G. Root.

Denver Medical Times, September.

68 Medicine in Egypt—Past and Present. R. W. Corwin.
69 *The Physician in Relation to the Dispensing of Medicine. J. Tracy Melvin.
70 Our Duty to Our Obstetric Patients. E. S. Wright.
71 In What Does the Contract Doctor Differ from the Veterinary Surgeon? Will B. Davis.
72 Severe Neurasthenia Dependent upon Anemia. Isaac Mayhugh.
73 An Acute Attack of Tonsillitis Aborted by the Use of a Solution of Adrenalin Chlorid x 1-1500. J. M. Mayhew.

Chicago Medical Recorder, September.

74 The Education of Mutes and Deaf Mutes by Means of Aural Exercises. E. F. Snydacker.
75 *Connell's Operation of End-to-End Anastomosis of Small Intestine. Franklin H. Martin.
76 A Study of Reflex Sensory and Motor Phenomena, with Reference to the Complete Distribution of a Neural Segment. W T. Eckley.
77 *Myasthenia Gravis, with Clinical Report of Case. Sanger Brown.
78 Ileus Caused by Neoplasms. A. J. Ochsner.
79 Ileus Due to Mechanical Obstruction to the Fecal Current. D. A. K. Steele.
80 Obstetrical Cases; Adherent Placenta, etc. Rachelle S. Yarros.

Medical Times and Register (Philadelphia), September.

81 *The Advantages and Disadvantages of Drainage After Abdominal Operations. Hunter Robb.
82 On the Treatment of Meningitis with Unguentum Crede. F. Dexenberger.
83 The Medical Treatment During the Adolescent Period. Edwin Rosenthal.

The Post-Graduate (N. Y.), September.

84 *Mercury—Its Action upon the System. William Henry Porter.
85 *Our Onomatology in Regard to Greek Terms. Achilles Rose.
86 Tuberculous Lymphomata of the Neck. Franz Torek.
87 Examination of the Blood. Hermann Lenhartz.
88 "Medicine" a Science. Joseph Clements.
89 Report of Clinic. Dr. H. D. Chapin.
90 Report of Clinic. Dr. A. Rose.
91 Notes from the Clinics. Dr. Brodhead.

American Medical Compend (Toledo, Ohio), September.

92 Addison's Disease, with a Report of a Case. Wm. J. Gillette.
93 A Study of Cerebral Function. Hiram A. Wright.
94 Health Resorts of the Southwest. L. B. Lockard.

Interstate Medical Journal (St. Louis), September.

95 *Neurasthenia. Sanger Brown.
96 *The Value of Venesection, Followed by the Saline Injection in Acute Lobar Pneumonia. William Porter.
97 A General Consideration of Pulmonary Tuberculosis, with Plea for Its Treatment at Specially Fitted Institutions. Robert M. Ross.
98 Insulation Complicated by Lobar Pneumonia. Floyd Stewart.
99 Report of a Case of Leprosy. Martin F. Engman and A. Faller.

Pacific Medical Journal (San Francisco), September.

100 The Need of Broader Views Concerning the Study of Inebriety. (To be continued.) P. C. Remondino.
101 Race Progress. H. D'Arcy Power.
102 Necessity of Dietetic Management of the Famous Mineral Springs of California. Frank H. Payne.

Merck's Archives (N. Y.), September.

103 Treatment of Consumption at Home. J. H. Jackson.
104 An Index of Diseases Alphabetically Arranged, with Their Modern Treatment. G. Bjorkman.

Southern California Practitioner (Los Angeles), August.

105 *Mental Therapeutics. Norman Bridge.
106 *Original Investigations of Spider Bites in Southern California. C. C. Browning.

Journal of Medicine and Science (Portland, Me.), September.

107 Heredity and the Transmission of the Insane Diathesis. W. N. Thompson.
108 A Porro-Cesarean Section. D. A. Robinson.
109 Third Report of the Committee of Inspection Appointed by the Executive Committee of the Post-Graduate Medical School to Review the Experiments of Dr. John F. Russell in the Treatment of Pulmonary Tuberculosis, at the Post-Graduate Hospital, New York, February, 1901.

Memphis Medical Monthly, September.

110 Movable Kidney. William D. Haggard.
111 The Routine Clinical Examination of Stomach Contents. Wm. Krauss.
112 *Some General Remarks on Malaria. Wm. Britt Burns.
113 Appendicitis. F. D. Smythe.

Medical Standard (Chicago), September.

114 Marasmus in Children; A Pediatric Clinic. Isaac A. Abt.
115 Appendicitis and Its Treatment. A. J. Ochsner.
116 Thoracentesis; Its Indications, Technique and Accidents. Aime Paul Heineck.
117 The Diagnosis of Typhoid Fever. J. T. Moore.
118 Light as a Therapeutic Agent. H. L. Mason.
119 Eczema Multiforme Involving the Entire Body. N. E. Aronstam.
120 The Circulation in the Nervous System. Herman Gasser.

Texas Medical Journal (Austin), September.

121 Criminal Abortion. J. P. Oliver.
122 *Apomorphia—Its Origin and Therapeutics, as Applied in Asphyxia, Drowning, Lightning Stroke, Emetic in Ejecting Poisons from the Stomach, Labor, Fever, Strangulated Hernia. Thomas J. Pugh.
123 Four Cases of Appendicitis, Illustrating Four Types of the Disease. A. L. Hathcock.
124 *The Age of First Menstruation in the United States. G. J. Engelmann.
125 The Increasing Sterility of American Women. George J. *Engelmann.*

Oklahoma Medical News (Oklahoma City), September.

126 Differential Diagnosis of Diseases of the Heart. W. T. Salmon.
127 Mosquitoes in Malaria. Ira B. Bartle.
128 Etiology and Treatment of Pelvic Peritonitis. H. C. Fleming.
129 Abortion Resulting in Acute Septicemia. C. Woodward.
130 Jacksonian Epilepsy, with Reports of a Case. E. G. Wood.
131 Uterine Hemorrhage Following Abortion. W. H. Van Doren.
132 Specific Treatment of Typhoid Fever. John Inglis.

Atlanta Journal-Record of Medicine, September.

133 The Advantages of the X-ray in the Treatment as Well as the Diagnosis of Certain Surgical Cases. M. F. Carson.
134 The Antiseptic and Eliminative Treatment of Typhoid Fever. T. Virgil Hubbard.
135 Typhoid Fever in Country Practice. J. A. Knight.
136 Report of a Case of Anthrax. Amand Ravold.
137 A Few Points in the Diagnosis of Ulcers—Running Sores. Thomas H. Manley.
138 A Case of Lupus Treated with Oils. N. F. Howard.

Southern Practitioner (Nashville, Tenn.), September.

139 Sprains. Van H. Coles.
140 Opium, and Some of Its Adjuvants and Corrigents. Q. C. Smith.

American Journal of Surgery and Gynecology (St. Louis), September.

141 Cystitis. J. F. Binnie.
142 Woman's Hospital Reports. Emory Lanphear.
143 Ovarian Tumor; Tube and Ovary Removed for Inflammation, Anterior Fixation of the Uterus; Miscarriage; Vaginal Fixation for Pelvic Suppuration; Ovarian Tumor. E. E. Montgomery.
144 Diagnosis of Renal Calculus. F. D. Carpenter.
145 Cyst of Spleen; Splenectomy; Recovery. Lewis S. McMurtry.
146 The Diagnosis of Gallstones. Neil MacPhatter.
147 The Prevention of Complications After Peritoneal Section. Henry T. Byford.
148 Notes on Vaginal Celiotomy, with Report of Cases. Thomas J. Watkins.

AMERICAN.

2. **Amputations.**—The special conditions under which amputations are justifiable are noticed by Cowan, who says that in every case of severe injury there are three questions usually confronting the surgeon: 1. The treatment of shock. 2. When to amputate. 3. Where to amputate. First he would consider the condition of shock as one of anemia and nervous exhaustion and treat it accordingly with nitrate of strychnia hypodermically, or nitrite of amyl and hot saline solution, which is one of the most valuable means we possess for combating shock, possibly the most valuable. In deciding when to amputate, the surgeon must largely be governed by the degree of shock, systemic and local, meaning by the latter the devitalizing or lowering of resistance of tissue in the vicinity of the injury. In profound systemic shock, operation almost invariably results fatally. He is opposed to immediate amputation in the large proportion of cases, always in profound shock, and not infrequently in the absence of systemic shock, and in certain cases where we are in doubt as to the extent of the injury to contiguous tissue. The question where to amputate is a very grave one to the patient and the rule that every inch of tissue should be saved that is possible, is not without its exceptions. The great desideratum, na-

turally, is to produce the most useful possible stump and in injury about the knee it may be better surgery to go just above the point, enabling the patient to wear an artificial limb with more comfort than in case of disarticulation. In dealing with injuries to the hand or fingers, the utmost conservatism should be employed, every finger or part of a finger that can be should be saved. In operations undertaken on account of pathologic conditions, among which he includes infections, gangrene, osteomyelitis, osteosarcoma, etc., amputation may be necessary. He has used local analgesia with cocain in a number of amputations, and recommends it especially where shock is grave and immediate amputation is deemed advisable. The technique of the operation is described at length and in too much detail to be reproduced. He thinks the circular method for amputation superior, as having advantages over the older transfixation operation. A large muscle flap is in no way desirable.

3. **Laceration of the Cervix.**—The special points made by Beyea are the factors of selection in operation, including the proper selection of cases, preparation for operation, attention to certain essential operative details and the selection of the proper operation for the individual cases. The selection of the cases is the most important. The chief contraindication to operation is the presence of pelvic inflammatory trouble outside the uterus, such as tubal and ovarian disease. There are also other lesions that must be recognized and repaired before perfect health can be restored. Treatment should be employed to prepare the parts for the operation. In regard to the details of the technique of trachelorrhaphy he only alludes to a few points. All cicatricial tissue should be thoroughly removed, no portion or part of a Nabothian cyst should be left in the line of denudation. Sutures should be accurately and evenly placed. If good asepsis is practiced union will never fail. The sutures should not be too tight nor too loose, but just enough to secure accurate and firm apposition. If there is the least suspicion of malignant disease the surgeon should not await developments, but the suspected tissue should be thoroughly excised.

7. **Cancer of the Rectum.**—Hupp's article is largely a review of the literature, though he reports several cases of his own. The latter part of the paper is taken up with the revision of the statistics.

9. **Intracranial Injections.**—This method is advocated by Anderson in a number of conditions and he summarizes his personal experience in the following: 1. It is of no advantage in acute bronchitis, at least during the congestive stage. 2. It is of distinct advantage in subacute and chronic bronchitis. 3. It is of positive benefit in bronchiectasis. 4. It is valuable in pulmonary tuberculosis, relieving many of the symptoms, especially those due to secondary infection. 5. It quickly relieves the distressing symptoms of asthma. The amount of relief and the permanency depend largely upon the predisposing and exciting causes. 6. It in no way interferes with other lines of treatment. 7. The writer has never seen harm follow its use, although in a very few instances it excited severe coughing for a short time.

11.—See abstract in The Journal, xxxvi, p. 1652.

12.—Ibid.

13. **Symphysiotomy.**—Jewett concludes as follows: Symphysiotomy is still a useful operation within a limited range of pelvic contraction. It is suited to conditions in which only very little additional space is required for delivery. It is a valuable resource, therefore, in cases in which forceps unexpectedly proves inadequate. Axis traction forceps with the aid of posture should always be tried before resorting to symphysiotomy. Its results would be much improved by restricting it to pelves with a conjugate of not less than 7.5 cm.—3 inches—in simple flattening or 9 cm. in general contraction. Under equally favorable conditions its total mortality should be no greater than that of Cesarean section. When the pelvic space permits it should replace the Cesarean operation in the presence of exhaustion. It may be elected primarily as an alternative of Cesarean section when the operator can be assured that the degree of obstruction is well within its safe limit. Here the choice of operation is a matter of individual preference. Within its proper field symphysiotomy is better than Cesarean section for an operator of little experience in abdominal surgery.

14. **Cesarean Section.**—The conclusions to which Reynolds has been led by experience are: 1. That Cesarean section performed late in labor or in the presence of infection of the uterus or other complicating constitutional conditions, has been shown by the experience of almost every one who has tried it to have so high a mortality as to be totally unjustifiable when performed in the interests of the child alone. 2. When Cesarean section is performed on a healthy woman under otherwise favorable circumstances for merely mechanical indications in skilled hands, there is no mortality other than the fractional percentage incident to all considerable operations per se. 3. The inconveniences and high morbidity rate of symphysiotomy make it distinctly inferior to section as the operation of choice, but it is the operation which, as compared with craniotomy or prolonged and forcible high forceps work without it, involves almost no increased risk to life. He therefore believes it to be an operation of choice in a somewhat limited number of neglected cases (those where Cesarean section is ruled out) in which the pelvic contraction is within the range and where the extraction of a living child without symphysiotomy is difficult or impossible, but after symphysiotomy, is safe or easy. 4. The induction of premature labor for contracted pelvis causes so high a fetal mortality as to be unwarranted, as compared with the performance of Cesarean section at the beginning of labor and in favorable cases. His belief in the safety of early section is based on a personal experience in 19 cases and observation of the literature for nearly ten years. His belief as regards symphysiotomy is largely from the experience of others and a study of the literature. Pelvimetry is our only means of diagnosing the existence of deformity and contraction, and he thinks it will come to the point where it will give us an accurate knowledge of the pelvis. He recommends careful pelvimetry during pregnancy in those multiparas whose previous history is that of difficult labor and in all primiparas, and, in conclusion, urges his personal belief that no man is justified in permitting Cesarean section as a last resort or upon infected or otherwise constitutionally ill women for the sake of the child alone, but that it can be done in the beginning of labor with a healthy woman with even less risk to either mother or child than is involved by unusually high forceps work.

15. **Heart Disease.**—The summary of Reed's paper is given as follows: 1. Cardiac disease is often due to autointoxication, especially to poisoning by the alloxuric bases; 2, cure or amelioration in such cases requires at first, in addition to an appropriate diet, not too nitrogenous, the utmost practicable rest of the crippled organ. This cardiac rest may be further promoted by very gentle exercises which dilate the capillaries without taxing the heart; 3, the Nauheim method of treatment spares the heart by dilating the too contracted arterioles in two ways—(*a*) by stimulating the peripheral circulation through carbonated saline baths; and (*b*) by massage and forms of exercise (*Widerstandgymnastik*) so mild as not to quicken the pulse.

16. **Social Aspects of Dermatology.**—In this third lecture Morris describes certain conditions such as ringworm, which he thinks was possibly imported from India. He goes over the history, pointing out that Gruby had, in 1844, published an article on the organism which was overlooked until it was rediscovered by Sabouraud about fifty years later. The number of organisms producing this is noticed and the author's own results given. His investigations have led him to the conclusion that there are at least two distinct fungi which may cause ringworm, one with small spores and the other with large ones. The large spored fungi attack the root of the hairs and go downward, and also attack the body in the region of the beard and elsewhere. The small spored variety attacks the scalp

chiefly, is in children almost exclusively and produces a very refractory condition indefinite in duration. The prognosis of scalp ringworm is not altogether a satisfactory one, though, as a rule, it comes to a spontaneous end after puberty. He believes that children affected this way should be treated in special schools apart from others, to avoid spreading the disease. Favus is also a disease which has undergone some changes as regards our views of it. It is much more serious than ringworm and exceedingly unpleasant. He thinks it should be restricted by legislation. The immigration of persons bringing it should be checked. Like ringworm it can only be stamped out by properly organized methods of medical and sanitary repression. He concludes by mentioning some unimportant forms of disease caused by vegetable fungi, like tinea versicolor and erythrasma, both of which are trivial.

17. **The Gonococcus.**—Eastman's article is a lengthy and elaborate description of the gonococcus and its toxins and seems to be quite thorough. It is too full to be abstracted. He believes that gonorrheal urethritis, once cured, affords some degree of immunity against subsequent attacks.

18. **Brain Disease.**—Eskridge sums up this series of articles which has been running through several preceding numbers in substance as follows: A careful study of temperature, pulse and respiration will give much valuable information, aiding in the diagnosis and prognosis of certain diseases of the brain. Careful and reliable records are required, needing much time and patience. Nurses are totally incompetent for such detailed work, unless specially trained to it. The change in the character of respiration rather than in its frequency is one of the first positive symptoms of intracranial organic disease, especially of tuberculous meningitis. A respiration that is more frequent while the patient is asleep or unconscious than during the waking or conscious moments, is very strong evidence of organic brain disease interfering with respiratory centers. Apoplexy due to hemorrhage is attended with greater disturbance of the body temperature soon after the stroke than is the case when the apoplexy is due to thrombus or embolus. The temperature disturbances in apoplexy due to hemorrhage, especially if attended with hemiplegia, are a slight fall of the axillary heat within an hour or less after the occurrence of the hemorrhage, the fall being a little greater on the paralyzed side. If reaction has occurred (eight to twelve hours on the average) we see a slight rise of temperature a little greater on the paralyzed than the opposite side, elevation from one-half to 2 or 3 degrees above normal for the next few days, the temperature remaining a little higher on the paralyzed side than the opposite side for a week or more in cases of complete hemiplegia; later, the temperature is slightly lower on the paralyzed side if trophic disturbances occur. In apoplexy from thrombus or embolism there is scarcely any appreciable temperature disturbance before the end of the second day, except in the severer cases, and then slight. In the majority of these cases there is no marked variation of temperature from the normal at any time, so that temperature disturbance the first day points very strongly to hemorrhage. Considerable disturbance of temperature, beginning from the second or fourth day, is significant of thrombus or embolus, and indicates extensive softening and an unfavorable prognosis. If the temperature of the paralyzed side remains higher than on the opposite side for several weeks after the occurrence of apoplexy from any cause, it indicates that softening or inflammation of the brain is progressing and the prognosis is very grave. It is premature to attempt to arrive at any definite conclusions from the study of the temperature, pulse and respiration in brain traumatism. This class of cases deserves a more detailed study of all their symptoms and it is probable that if they were classified and grouped according to the severity of the injury and the character of the symptoms, a careful comparison of the temperature, pulse and respiration would lead to important conclusions. In regard to the traumatic class of cases it seems we are justified in making the following tentative statements: 1. All cases of injury to the head in which the temperature does not reach normal or slightly above a few hours after the receipt of injury will probably prove rapidly fatal. The higher the temperature the greater the probability is that contusion or laceration of the brain and membranes is the more important factor in the case than intracranial hemorrhage. The greater the variation of the temperature from normal, either above or below, the worse the prognosis. 2. A rapid, weak, intermittent and irregular pulse indicates danger. A pulse that is first slow, but soon after becomes quite rapid indicates that the brain power is being overwhelmed by the intracranial lesion, and justifies a bad prognosis. 3. The exceedingly slow and intermittent respiration (8 to 10 to the minute) indicates a lesion at the base in the posterior fossa. The slower and the more pronounced the intermission of respiration the greater the danger of sudden death. A respiration at first nearly normal in frequency but soon after becoming quite rapid, indicates a rapidly fatal case.

20. **Osteomalacia.**—Brennan suggests that osteomalacia of the mother is due to the absorption of calcium salts by the fetus indirectly by taking from her blood the pabulum which she requires to build her own tissue. In the case of a poorly-fed woman, she holds, this would easily occur. We may say then, according to this theory, that osteomalacia is a condition the result of the poverty of calcium salts in the blood of the mother by which the osseous tissues are starved by the fetus assimilating all the valuable salts. If the diet were rich in salts there would be sufficient for both.

21. **Medical Education.**—Burrell calls attention to the value of experience, which, nevertheless, is not the only method of obtaining knowledge and can be supplanted in some measure by the student having a foundation firmly laid by scientific methods in laboratories for research work, hence the value of laboratories. The special practitioner will have his foundation laid in these, and carry the training he has there received to individual patients. The uses of the clinical laboratory are stated by Burrell as follows: 1. The habit which the student will form of examining clinical products in each individual patient as he presents himself. 2. The training of students to apply their abstract scientific knowledge to the concrete example of a patient. 3. The stimulus to acquire knowledge at first hand, which will not alone be felt in his laboratory work. 4. The impetus it will give to research. The writer also says that the compensation and the position of the teacher of medicine at present are not what they ought to be. He is obliged to give his time and attention 1, to his living, 2, to his hospital work, and 3, to his teaching. The matter will not be improved until the medical schools make a teaching position the principal object of a man's life. Burrell considers that the value of lectures, recitation, demonstration, etc., is still undetermined. There are certain subjects that are always best presented by lectures, and clinics will always be of great advantage. Extramural teaching should be carefully tried in all large centers of population. Graduate instruction at the present is not sufficiently scientific. The doctor goes to get therapeutic tips, the latest dodges in operative technique and the reputation of having the latest scientific facts. The graduate instruction should be planned so that real knowledge can be obtained in the shortest possible time. The function of the modern medical school is that of a university of medicine, and should fit the students for the practice of specialties and biologic work as well as for general practice. What the curriculum should be is yet a question. He gives a diagrammatic showing and criticism of the curriculums in four leading schools, not, however, designating the institutions. He summarizes that every school of medicine should establish its curriculum not depending on the wishes of the head of each department, but planned for the good of the student, and should establish in each of its departments the minimum required course for the average student. During the fourth year of instruction the work should be essentially elective and optional in order that students can prepare themselves for the special lines they are to engage in. Improvement in the method of instruction can best be secured by active competition. This can be obtained by the medical schools of the country adopting a standard of minimum required work.

At what period this minimum required work should cease is open to argument.

22. **Heart Disease.**—Edes commences by remarking that the time is not long past when the prognosis was based upon the observation of cardiac murmurs almost exclusively, and the average practitioner is supposed still to be in bondage to the old ideas. He describes the physiologic action of the heart and shows that the line between the healthy acting and inefficiently active heart can not be sharply drawn, but has a varying margin which can only be told with precision by experiment, which may be dangerous. It is only in the increase of muscle power and in regulating it so that it can be economically used that the best results are to be obtained. He dwells on the importance of the trained touch to diagnose the pulse, and, while it is not possible to diagnosticate actual degeneration of the cardiac muscle, it can be done with sufficient probability for practical purposes. He considers the term "heart failure" a proper phrase for the state of things when the margin has been passed in the wrong direction. It is objectionable only because it is so easy to misapply. In conclusion he describes the innervation of the heart and remarks how many points are yet undecided in the physiology, and pathology is still further behind.

25. **Spermine Crystals in Pus.**—Williams reports the results of examination of pus from a case of long continued cervical abscess in which he has found spermine crystals in almost every slide. He also found great numbers of needle-shaped crystals, which, he concludes, must be adenine, guanine or sarcine, with others which he took for xanthine. If his observation is not at fault this finding of spermine in the pus makes the fourth or fifth of the nuclein bases thus far observed and xanthine may also be added as a possible discovery by himself.

28. **Blood Structure Study.**—Birchmore reports observations on the blood of a turkey which had been killed by cutting the carotid artery by way of the mouth. The knife thrust had opened the way into the lymph space and the blood had filled it, and, coagulating superficially, had half-sealed the wound of entry. The head and neck were dissected not less than 120 hours after killing and the findings strongly suggested embryologic conditions of the blood; he thinks that certain developmental changes take place in the body after death. The animal was over-stuffed with food. The blood was peculiarly in a condition to feed the corpuscles, which might be regarded as the only living cells left in the body. The absence of air reproduced to a certain extent embryologic condition, though the absence of heat was different. He asks does this combination of ample food with deficient respiration and heat explain the pertinacious following in the steps of development impressed upon the substance of the cells, the exceeding slowness of metabolic change, the persistence of these shadows, the simulacra of embryonic conditions. If so, he says, one is tempted to ask what would have happened between the condition reached and the moment when the pseudo-embryonic tissue, its growth-impulse exhausted, or no longer protected by environment, was assailed by the agents of decomposition. The question he leaves unanswered.

31. **The Prophylaxis of Tuberculosis.**—Before advising prophylactic measures the question of their practicability is raised by Kueber. He remarks that the laws proposed by certain boards of health are of doubtful utility. The danger of infection is not founded upon indisputable facts. Since 1854 there have been in Gerbersdorf, according to Brehmer, more than 10,000 consumptives and he asks, what quantities of sputum have not been ejected on public highways and streets and what quantities of infected matter have not been breathed by the inhabitants of Gerbersdorf, among whom the percentage of consumptives has decreased during the last twenty years from 0.41 to 0.18 per annum. Pollock says as regards infection that he has investigated the Brompton Hospital from the beginning until now and there has been among the nurses, house physicians, dispensers, floor scrubbers, etc., no more than four cases in fifty years. Out of 4000 cases which he has attended in hospital practice, at least 30 per cent. had the hereditary element. Other facts mentioned are the decrease in consumption in the British barracks since the ventilation has been improved and among the monkeys in the zoologic gardens in Paris. If there were one-half as much danger from infection as some would have us believe, it would be very unwise to send patients suspected of consumption to places full of consumptives. More than one hundred years ago the most stringent measures against the spreading of consumption by infection were enforced in Naples for several years. The result was a great hardship on the population without the least decrease of the mortality from consumption. Anyone who gives attention to the cause must conclude that the danger of infection is of subordinate importance, and, if the boards of health instead of wasting their efforts in impracticable measures would concentrate their efforts on regulations of indisputable merit, a great deal of good could be accomplished. A change for the better may be looked for when the boards of health and public have become convinced of the following: 1. That the tubercle bacillus is ubiquitous and that we can not escape it anywhere. 2. That the bacillus is harmless until it finds a congenial soil. The same is true also of some other bacteria. It was shown at von Leider's clinic in Berlin, some time ago, that ordinary bacteria in the blood circulation of animals affect the heart valves only when these are already injured. 3. That the human body offers a congenial soil when its vitality is undermined by one or the other of the many causes that are deleterious to health. 4. That there is no better and surer and easier preventive against consumption than to keep the body proof against tubercle bacillus. This can be done by avoiding the causes that make the human body susceptible to it. Foremost of these and the one most disregarded is working, living and sleeping in a confined and contaminated air. Few people give attention to the ventilation of their sleeping rooms. Sunshine and air are the last things thought of. The next noteworthy causes that undermine the vitality are certain occupations, such as stone cutting, needle grinding and workers in dust, and instances of prolonged worry, dissipation and irrational feeding.

32. **The Home Management of Epilepsy.**—The treatment of epilepsy is discussed by Porter, who shows the bad effects of even careless words, harsh fault-finding and especially of unfavorable environments. No fixed rules or regulations, however, can be laid down. Each individual must have his own treatment. A few of the patients, especially among children, may show some minor defects in manners; it is best as far as possible to ignore many of their shortcomings. The proper training of the mind, abstinence from stimulants, prudence and temperance in diet and mental diversion are especially advisable. Fear, anxiety and worry are dangerous conditions of the mind, and discussion of the condition or any remarks in regard to the probabilities of the case in presence of the patient are to be condemned.

33. **Retroversioflexio-Uteri.**—In this article Bandler describes the anatomy and physiology of the condition, and the following is a summary of his views, leaving out the question of retroflexio-fixata, and the peritoneal complications of retrodeviations: 1. Retroversioflexio per se is not a pathologic condition. 2. The majority of retrodeviations are of congenital origin. Retroflexioversio is not an obstacle to the cure of pelvic affections. 3. Where retroversioflexio without peritoneal, tubal, or ovarian complications causes symptoms, an hysteroptosis must be taken into consideration, always bearing in mind the possibility of other physical states, especially gastroptosis, enteroptosis, ren mobilis. 4. Prolapsus vaginæ and cystocele, while often associated with retrodeviations, are independent affections. 5. Where retroversioflexio is accompanied by severe local symptoms, these, if not due to peritoneal, tubal, or ovarian complications, may be corrected in the vast majority of cases without surgical treatment.

35. **Progress of Gynecology.**—Dorsett reviews the progress of gynecology and obstetrics, calling attention principally to the surgery and the advance in the matter of perineal operations and in the surgical treatment of fibroids. Since he has

used the angiotribe in the latter, he considers the operation less dangerous than before, as ligatures are dispensed with, the vessel is just as safely disposed of and the time shortened. He says the more one studies the question of the management of fibroids the more convinced he becomes that in the great majority of cases myomectomy should only be performed in cases where the tumor has a pedicle. The ragged bed left after the enucleation, composed as it is of bruised and devitalized tissue, is too fertile a soil for the propagation of pathogenic organisms. He also mentions the importance of early diagnosis of a malignant disease and the abuse of the curette. As regards the advisability of Cesarean section in placenta previa, he says it is difficult to approve of this method, though one feels that it may be possibly justifiable in this most dangerous condition, if in any.

36.—See abstract in The Journal, xxxvi, p. 1726.

38.—Ibid., p. 1727.

49.—This article has appeared elsewhere. See The Journal of September 28, title 155, p. 863.

50. **Uterine Irrigation.**—Fitzgerald advises the use of free intra-uterine irrigations in cases of infection in preference to the curette. He has been making use of the irrigation in all septic and toxic-genetic troubles, but especially in puerperal conditions where he thinks its benefit has been most apparent. He advises irrigation well up to the fundus, flushing of the uterine cavity with carbolized water by reflux irrigator with a fall of two feet, and, while it is still in the uterus, the douche is detached and, by means of a short tube, a small glass funnel is attached which should be held about fourteen inches above the end of the irrigator and a little peroxid of hydrogen introduced at a time, giving time for action of each addition. He would repeat this operation after several hours and has found this method very satisfactory in cases of uterine infection. The curette should be used less frequently and more reliance placed upon the stimulating, unirritating, intrauterine douche and free drainage, preceded always by thorough removal of all infected matter that can be taken away without injury to the normal structure, with subsequent irrigation, repeated as indicated.

52.—This article has appeared elsewhere. See The Journal of August 24, p. 495.

57. **Chronic Nasopharyngeal Bursitis.**—The bursa pharyngea which occurs in the vault of the pharynx exactly in the median line is not a congenital one, but may occasionally be traced to arrested development. Its existence is doubted by some writers, but Roy has been able to find it almost universally present in this opening in the vault in cases where there are decided objective symptoms of nasopharyngeal catarrh. He reports cases and thinks there must be something more present besides adenoid hypertrophy to account for the condition. The reason why it is not more often recognized is largely due to the fact that it is not frequent and probably not recognized as a distinct condition by many observers. While he believes in it himself he can not agree with Thornwaldt in attributing every case of postnasal catarrh to this condition. The best treatment he has found, in addition to thorough cleansing which the patient can do at home, is the application of a solution of silver nitrate, 60 gr. to the ounce, directly to the sulcus, followed by thorough spraying of the nasopharynx with hot melted vaselin and orthoform. His success with the curette and electro-cautery was not encouraging.

58. **Injuries to the Uvula.**—Oppenheimer reviews the various traumatic injuries to which the uvula is subject, all results of direct violence, excepting those due to extensive strain of the parts sometimes observed in singers, or from violent force to clear the throat as is hawking. In these cases the symptoms are altogether out of proportion to the apparent amount of injury. No special form of treatment is indicated, excepting when the tissues have been lacerated, then the local application of ice is very useful. In extensive edema, multiple incision is indicated, and in any inflammatory condition mild soothing applications are valuable.

59. **Apposition of Simple Incisors.**—The condition when the two middle front teeth are separated by a space is due, according to Loeb, to a small ridge of tissue which passes from the labial frenum downward between the teeth and depends upon the implantation of the frenum upon the gingival surface. When the attachment is high up the fibers are lost before they reach the inner surface of the alveolus, while, when it is low down, the fibers in the vast majority of cases continue between the two central incisors and are spread out in a fan-shaped manner between the palate. These observations were made on the living subject and while the condition has no bad effects, from the cosmetic standpoint it is undesirable. The operation which he advises consists in plunging the galvanic knife in the median line, beginning at the upper and anterior margin or mass of tissue just described and carrying it well into and behind the alveolus even to the fan-shaped prolongation on the palate. One application will sometimes be sufficient, though three or four may often be necessary. The operation may be performed before the retention bands have been applied or during their application and use. Care should be taken not to insert the cautery point too close to the teeth; the reaction from the operation is very slight, not more than from cauterization of the nose.

62. **Acute Lacunar Tonsillitis.**—This condition occurs most frequently between early life and adolescence. It is undoubtedly infectious and to a moderate degree contagious. The cervical lymph and ear complications need only to be mentioned. The treatment is local and constitutional. Ward does not claim to be able to abort the condition. All we can hope to do by local treatment is to modify the severity, as it is self-limited. However, indiscriminate local treatment, digging and probing is productive of more harm than good. He has been in the habit of giving the following as a routine treatment:

℞. Acid. carbolic ....gtt. x
Acid. boracic
Sod. biborate āā ....ʒiss
Hydrogen dioxid
Borolyptol, āā ....℥i
Aquæ dest. .... q. s. ad f. ℥viii

He advises also small particles of cracked ice or water and spray in the early stages of the disease. If there is any indication of extensive lymphatic involvement, the ice-coil may be used. The constitutional treatment consists in free purgation with calomel and effervescent sodium phosphate. For fever, headache, and muscular pain he usually combines codein sulphate, salol and phenacetin, in proportion to suit the age and requirements. With a previous history of rheumatism he relies on salicylate of strontium or soda, and tincture of chlorid of iron is a remedy, the value of which can not be overestimated. It has a decidedly beneficial local effect and a selective action on the blood and kidneys, and should be given during the acute stage and continued into convalescence. One attack predisposes to another and the removal of the troublesome organs should be practiced during the quiescent periods, but never in the active stage of the disease.

63. **Non-Syphilitic Mucous Patches.**—The conditions which simulate syphilitic mucous patches are as follows: Aphthous stomatitis, which is usual in children, is inflammatory and has a thick yellowish exudate; herpes buccalis, also painful and otherwise different, and pemphigus, which is more serious and in which anti-syphilitic treatment would be decidedly harmful. Close observation will reveal the remains of an elevated cuticle and in some the lesions are apparently preserved. Leucoplakia, however, is the most frequent cause of error. It is more permanent in its character, the surface is smooth, tough and warty. It is aggravated rather than benefited by anti-syphilitic treatment. The use of nitrate of silver or chlorate of potash may also give trouble, which may cause confusion. Joachim believes what are apparently very much like syphilitic lesions do sometimes appear on non-syphilitic subjects and that the evidence is not always safe for diagnosis and treatment of syphilis.

69.—See abstract in The Journal of July 13, p. 138.

75.—This article appeared in THE JOURNAL, xxxv, p. 1151.

77.—See abstract in THE JOURNAL, xxxv, p. 1107.

81.—This article appeared in THE JOURNAL of July 6, p. 20.

84. **Mercury.**—The much discussed physiologic action of mercury in the system is again reviewed by Porter, who sums up the principal action of the mercurials as follows: "1. Stimulant to the hepatic cells. 2. Cholagogue in action by virtue of exciting hyper-secretions of the bile acids. 3. Sedative due to the two previous actions. 4. That its alterative, antiphlogistic, anti-syphilitic, diuretic actions, etc., are secondary to the above actions. 5. That ptyalism from mercury is due to the inactivity of the hepatic cells, and to the salivary glands attempting to do what should have been done by the hepatic cells."

85. **Onomatology.**—Rose criticises the incorrect Greek of medical nomenclature, calling attention to such words as appendicitis, conjunctivitis, albuminometer, etc., and such incorrect ones as chlorosis, polyclinic, glycosuria, hemophilia, etc. He admits that the question of introducing correct Greek terms in place of the incorrect ones is a rather serious one, but suggests a committee of competent physicians and philologists combined be appointed by some representative medical society.

95. **Neurasthenia.**—Brown coins a word "neurenergen" which he defines as a supposed ultimate form of organic matter contained in the neurons, through which agency it is convertible into waste products and various manifestations of nervous energy. According to this conception, there is in health a current of neurenergen constantly flowing into the neurons, which is no less constantly transformed by them into energy and waste products. This notion is specially applied to neurasthenia in which condition there is a standing deficiency in neurenergen. The causes of neurasthenia are noticed, including age, shock, worry, etc. He recognizes a class of people who are in a state of congenital chronic lack of stamina which he would not include under this head. Motor neurasthenia is best illustrated by the stale athlete; the sensory form has no special diagnostic symptoms. The mental form is characterized by lack of capacity of attention and mental confusion. Involvement of the special senses and the vegetative organs are also mentioned. The rest cure he thinks is somewhat overdone, too many promoters are taking hold of it and administer it without regard to medical advice. Still it is an excellent method under proper supervision, though men will seldom submit to it. Much outdoor life should be required in most cases, regulated exercises, a generous diet, and regular and frequent periods of rest. The neurasthenic business man should shorten his hours, a proper sort of vacation occasionally affords relief. The tact and skill of the physician are particularly taxed in these cases. He never receives compensation at all commensurate with the value of his services.

96. **Pneumonia.**—The utility of venesection followed by saline infusion is argued by Porter, who does not, however, advocate the method to the exclusion of others. The rationale of the treatment is discussed by him and he says he believes the whole treatment of lobar pneumonia may be summed up in a brief formula: conserve the strength, guard the heart and diminish the toxins. It is a self-limiting disease, but should be helped over the severer places. The mortality is at present greater than it should be, and the early routine and reckless use of heart depressants are responsible for disasters at later stages. He reports a case in which he considers venesection and saline solutions saved the patient, where ordinary remedies would have failed.

105. **Mental Therapeutics.**—Bridge believes that we should lessen the emotional attention to infants, which may produce even true neurasthenia in the first year, and not try to be constantly entertaining children or encouraging emotions that may be vicious ones; later in life we should stop trying to make them young ladies and gentlemen. We should lessen, as far as possible, the emotional strain at school, the fear of failure, etc. Some children suffer this way; increase of outdoor life would be better for people in general. Too much indoor life keeps us below par. The desire to shine in society and business is more often the cause of neurasthenia than nervous overwork. We must have less dress parade in our lives. People who are carrying mind and body loads which are too heavy should have them lessened.

106. **Spider Bites.**—The danger from poisonous spider bites is a popular belief. According to Browning there are but two species of spiders in Southern California reputed to be poisonous; one, of the genus "Phidippus," which is hairy, with red spots on the upper surface of the abdomen, belonging to the family of wandering spiders, seeking its prey after the manner of the feline race; the other, of the genus "Lactrodectus," glossy black, with red spots on the under surface of the abdomen and belonging to the family of line-weavers. He does not know of any case where the bite was specifically stated to be due to the former species, though the conditions of the accident and the lack of characteristic symptoms of the other type lead to suspicion in some cases; a number of cases have been reported of the lactrodectus bite, the results of which may be very severe and even fatal in some cases. The animals seem to prefer outhouses and most bites have been received in them. It is not specially aggressive, but probably is dangerous because of its locality, in the seats of outdoor closets, etc. These seats, he thinks, should always be made to swing on hinges to protect against this. The general symptoms are more often severe than the local ones and may take periodical form, occurring at regularly certain periods of the day. General prostration and weakness is occasionally observed, the first symptoms occurring a few minutes after the bite, with severe rigor, nausea, depression of heart action, lowered temperature, cold perspiration, severe pain in the lumbar region, gradually extending towards both the extremities and the precordia and followed sometimes by convulsions and death. Generally, however, the circulatory and respiratory symptoms begin to ameliorate, temperature and pulse becomes normal, but the pain continues however, and also a slight general edema. He reports a fatal case.

112. **Malaria.**—Burns suggests an antagonism between malaria and typhoid infection, giving his experience as proof of this view. In the region from which he writes the conditions of soil, sewage and water supply are just such as would appear conducive to the propagation of the typhoid germ. This, with the advantage of an insalubrious climate, with people generally below par, yet does not produce many cases of typhoid. He does not believe in any form of malaria that is not amenable to quinin. Hemorrhagic malaria is mentioned. He has had a number of cases where there was spitting of blood and other signs of pneumonia without pneumococcic infection, while blood smears have shown the plasmodia. All cases responded in three or four days to a good gland arousement and quinin. Some of these cases he has regarded as prebacillary tuberculosis. Blackwater fever occurs in his region, and, contrary to what Dock says, the condition is not hematuric. It is in all essential particulars the same as, and in fact is, a malignant malaria with a condition of hemoglobinuria and rapidly increasing jaundice. It usually occurs in old residents, rarely in newcomers and more often in males than females. He does not believe in toxic hemoglobinuria other than from quinin, and he does not hesitate to use quinin in this condition.

122. **Apomorphia.**—Pugh recommends the use of apomorphia in cases of asphyxia to stir up respiration, and would give it hypodermically in the arm or over the stomach in .10 gr. doses every ten minutes. He reports a case where he aroused a man in this way who had been reported dead by two physicians after suffocation from coal gas. He would also use it in drowning and lightning stroke and opium poisoning, though its effect as an emetic if given early would be self-evident in this last case. We have in it also one of the valuable remedies in retarded labor, due to rigid os, and in cases of strangulated hernia, where it produces relaxation; this alone with gravitation often relieves the condition. He says he has treated a number of strangulated cases in this way and always with success.

124.—See abstract in THE JOURNAL, xxxvi, p. 1650.

FOREIGN.

British Medical Journal, September 21.

A Simple and Rapid Method of Producing Romanowsky Staining in Malarial and Other Blood Films. W. B. Leishman.—The author describes a simplified method of producing the Romanowsky staining of blood films with a solution prepared as formerly described by him in a previous note. Solution A: Medicinal methylene blue (Grübler). A 1 per cent. solution of this was made in distilled water, and then rendered alkaline by the addition of .5 per cent. of sodium carbonate, then heated to 65 C. in a paraffin oven for twelve hours, and afterwards allowed to stand at room temperature for ten days before using. Solution B: Eosin, extra B. A. (Grübler), 1 to 1000 solution in distilled water. Equal volumes of these two solutions, A. and B., were then mixed in a large open vessel and allowed to stand for from six to twelve hours, stirring from time to time with a glass rod. The abundant flocculent precipitate resulting is then collected in a filter, thoroughly washed with distilled water until the washings are colorless or have only a pale blue tinge, and the insoluble residue carefully collected, dried and powdered. The resulting powder, which has a greenish, metallic luster, constitutes, or at least contains the active staining ingredient in Romanowsky's method. Full directions for the manufacture of this dye has been furnished to the firm of G. Grübler & Co., Leipsig. The best solvent for this dye which he has found is pure methyl alcohol, and, by taking advantage of the powerful fixative properties of this alcohol, Leishman is able to dispense with any separate process of film fixation. The dye prepared as the above should be dissolved in methyl alcohol in the proportion of 0.15 per cent., and the resulting solution kept in stoppered glass bottles until required for use; it does not deteriorate by keeping. It is of a clear dark-blue color, and shows a greenish iridescence when illuminated by reflected light. It is applied directly to a film on a cover glass and no attempt made to check the evaporation. After about half a minute, double the quantity of distilled water, that is 6 or 8 drops, are added and allowed to mix with the alcohol solution of the dye. Intimate mixture is hastened by rotating the forceps, and the films are allowed to stand for five minutes, though ten minutes may be necessary with thick blood films or smears from cellular structures. The stain is gently washed off with distilled water and a few drops of water allowed to rest on the film for a minute. At the end of this time the specimen is ready for examination, either directly in water under a one-sixth or one-eighth inch objective, or, after drying (without heat) and mounting in xylol balsam, under an oil-immersion lens. The whole operation, from the withdrawal of the blood to the mounting of the stained film, can be done within seven or eight minutes and no reagent is needed beyond a few drops of the stain and a little distilled water. Where the latter is unobtainable, rain water or soft hydrant water may be used without greatly affecting the results. The soaking in distilled water for a minute after the staining is important as intensifying the Romanowsky stain; it removes the remains of the deposits and changes the tint of the red blood corpuscle from a greenish blue to a transparent pink, or greenish, and nuclei of the leucocytes usually a ruby-red. The nucleated red cell is stained almost black with sharp outlines, and the extranuclear portion, gray. The blood plates are deep ruby-red with spiky margins, frequently showing a pale blue peripheral zone surrounding the red center. The bacilli and micrococci generally stain evenly blue, but, by prolonging the period of staining and decolorizing with absolute alcohol, many interesting differences may be noted in the different organisms, bringing out the structural details not generally observed with other methods. The body of the malaria parasite stains blue, and its chromatin, ruby-red. In the case of the tertian parasites Schueffner's dots are well marked in the containing red corpuscles.

The Value of Neisser's Stain in the Diagnosis of Diphtheria. R. M. Beaton, F. Foord Caiger and Walter C. C. Pakes.—The authors have studied the comparative values of the Neisser's stain and the methylene blue stain and find from their investigations that the former is a valuable one in several ways: "1. A positive diagnosis is rendered more certain for those who can not be considered as experts, since it is often easier to diagnose the Klebs-Loeffler bacillus after staining by Neisser than after staining by ordinary methylene blue, as we think that for the inexperienced the bacilli after staining by Neisser's method are much more characteristic than after staining by methylene blue. 2. A trustworthy positive result may be obtained from the microscopic examination of a preparation made direct from the swab, and this method is, we think, not only more reliable when Neisser's stain is used, than when the ordinary methylene blue is employed alone, but is more obvious. 3. The use of Neisser's stain does not appear to introduce any fallacy not found in the application of other methods."

Pneumococcus Peritonitis.—Three cases of pneumococcus peritonitis are reported and the condition discussed. Bryant finds that it rarely occurs in adults and when it does, men are more liable to be affected than women. In children, on the contrary, girls are much more frequently attacked. Why the peritoneum should be attacked by the pneumococcus is not clear. The source of infection may be by the alimentary canal. The fact that pneumococci are frequently found in the mouths of healthy people would indicate that they can be easily introduced into the digestive tract. The possible explanation as to the reason that the peritoneum is so rarely affected by this organism are that the ordinary digestive fluids are inimical to its growth and development. If, however, there is a severe gastro-intestinal disturbance of any sort there will be not only a general lowering of bodily resistance and lowered local resistance, but also an altered condition of the secretions. This may predispose to the growth and development of the germ and allow its passage by means of the blood vessels and lymphatics to the peritoneum itself. The large proportion of girls to boys would indicate that there is the possibility of infection taking place through the Fallopian tubes or uterine blood vessels, but the rarity in adults would not agree with this. He is inclined to think from the chemical and pathologic evidences that the primary infection of the peritoneum is probably through the alimentary canal, with a subsequent general blood infection leading to pleural infection. When the peritoneum is infected through the lymphatics, it is nearly always secondary to pneumonia or pleurisy, and the part of the peritoneum most involved is that covering the upper part of the liver and spleen. In some of the cases of local pneumococcus peritonitis the organism may be conveyed from the uterine cavity to the peritoneum by the lymphatics and not by the Fallopian tubes, and he thinks that when the infection is carried in this way the peritonitis is much more likely to be local than general. The skin is another possible channel by means of which the pneumococcus can reach the peritoneum, but thus far he has seen no cases that point to this manner of infection.

The Pathogeny of Exophthalmic Goiter. E. Gley.—The theory of the pathogeny of exophthalmic goiter is discussed by Gley, who says the old idea of its being a cardiac condition or a pure neurosis is generally abandoned. The hyper-thyroidization theory, however, is still held to some extent, but he points out the difficulties, and the fact that thyroid alimentation may even benefit this condition in some cases, is a difficult one to explain by it. The idea of sympathetic excitation has also its difficulties. The phenomenon in its turn needs an explanation; what causes this excitation of the sympathetic is not stated by those who hold this view. The theory of the part played by the parathyroid bodies in this condition is to be considered, and he goes to some length into the physiology of these organs, maintaining that they are functionally associated with the thyroid and that the proteo-iodid substance is not produced in the thyroid without the assistance of the parathyroids. If the latter are altered its production is diminished, hence we come to the theory that exophthalmic goiter is due to alteration in the thyroid apparatus involving in the first place functional disturbance of the parathyroid bodies. He refers to the researches of Oliver, Schaefer, and Haskovec showing that the extract of the thyroid produces a stimulative action on the sympathetic and a depressant antitoxic action on the heart. In exophthalmic goiter Haskovee concludes that the thyroid gland is diseased and the mechanism by which the symptoms are produced is by entrance into the organism of toxic substances, having a selective action on the sympathetic system. Gley asks, may we believe that the toxic substances result from lowered functional activity of the parathyroid glandules because of the inability of the secondarily diseased thyroid to neutralize them? The question, however, can not be definitely answered.

On the Urine in Tuberculous Infection. ALEX. G. FOULERTON AND WILLIAM T. HILLIER.—The authors have investigated the urine in cases of tuberculous infection by chemical and microscopic examination, and by animal inoculation experiments have tested also for albuminuria, urea, diazo reaction, etc. They summarize their inoculation experiments as follows: Of 18 patients suffering from more or less chronic, tubercular, pulmonary phthisis, the urine contained bacillus tuberculosis in 9; in 6 of these, the absence of tuberculosis of the urinary tract was proven by postmortem examinations and there was no reason to suspect that the condition existed in any of the other 3. So far, therefore, as they can generalize from a series of only 18 cases it can be said that the urine of 50 per cent. of the far advanced cases of tuberculous pulmonary phthisis, contained bacillus tuberculosis, virulent to guinea pigs. In only 1 of these 7 cases examined postmortem was there any evidence of infection of the kidney. While the facts show that general blood infection as evidenced by the presence of the bacillus in the urine is more common in cases of consumption than generally supposed, it also shows that when it invades the blood, it does so usually in extremely small numbers and has but little tendency to multiply there, and that any occasional bacilli that may get into the blood stream are eliminated by the kidneys. These glands show only a slight tendency to become infected in the process. They suggest that it is probable that the patient in many cases of phthisis is undergrowing a gradual process of auto-immunization and that after a time the tissues generally are less susceptible to infection than when the pulmonary infection occurred. Only in this way can we explain the fact that, considering the frequency with which the germs get access to the blood, dissemination of the tuberculosis is comparatively uncommon in chronic, tuberculous, pulmonary phthisis. They do not apparently find much to indicate the value of guinea-pig inoculation in the diagnosis of tuberculosis. In a number of cases 2 c.c. of urine were injected into healthy animals, and careful observations made to ascertain whether such urine showed any difference as regards the immediate toxicity from the urine of healthy individuals, but none was detected.

Bacteriology of Cerebrospinal Meningitis. A. W. NUTHALL AND W. HUNTER.—The following are the authors' conclusions from their studies of the literature and examinations in cases of disease: "1. In 10 cases of meningitis a diplococcus was isolated from the cerebrospinal fluid obtained by a lumbar puncture during life. 2. This diplococcus agreed in its morphologic and biologic characteristics with the diplococcus intracellularis meningitidis of Weichselbaum. 3. The diplococcus occurred in two slightly different forms—types A. and B. 4. In some cases the diplococcus was present in pure culture, in others associated with micro-organisms—for example, bacillus influenzæ and bacillus tuberculosis. 5. The clinical picture and pathologic changes found in these cases were those met with in posterior basal meningitis. 6. In all probability posterior basal meningitis is a sporadic form of cerebrospinal meningitis and is caused by the same micro-organisms—the diplococcus intracellularis meningitidis of Weichselbaum. 7. In the majority of the cases it was impossible, from the clinical aspect alone, to make a correct diagnosis of the variety of meningitis present."

Contribution to the Histo-Pathology of Yaws. J. M. H. MACLEOD.—The following is a summary of the histologic changes which MacLeod finds suggesting that yaws and syphilis are different histologic entities: "1. Cellular infiltration.—The plasma cells are not so definitely clustered around the vessels in yaws as they are in syphilis, nor do they ever form foci suggesting a tuberculous nodule, as they occasionally do in the latter disease. They are seldom arranged in rows which frequently occurs in syphilis. Large multinuclear cells (chorioplaques) and true giant cells, which may be present in syphilis, are absent. No hyaline degeneration, such as may be found in syphilis, is detected in the plasma cells. 2. Fibrous stroma.—The rarefaction of the collagen is more marked in yaws than in syphilis; organization is not detected, and the colloidal degeneration, such as occurs in a syphilitic gumma, is absent. 3. Blood vessels.—There is no tendency to thickening of the vessel wall or to endothelial proliferation, such as so frequently pertains in syphilis. 4. Epithelium.—The proliferative changes in the epidermis in yaws are only equalled in syphilis in the condylomata, while the marked tendency of the stratum corneum (hyperkeratosis), which is an invariable characteristic in yaws, is unusual in syphilis."

The Lancet, September 21.

The Occurrence of Green or Blue Urine and Its Most Frequent Cause. F. PARKES WEBER.—Weber considers that a blue urine, occurring without obvious cause, is generally due to undue eating of sweets colored with methylene blue. The digestive disturbances which sometimes accompany the symptoms are probably due to over-eating of sweets, as they are not produced by much larger quantities of the coloring agent taken by itself. He is skeptical as to the power of other substances to produce the symptom excepting in very rare cases.

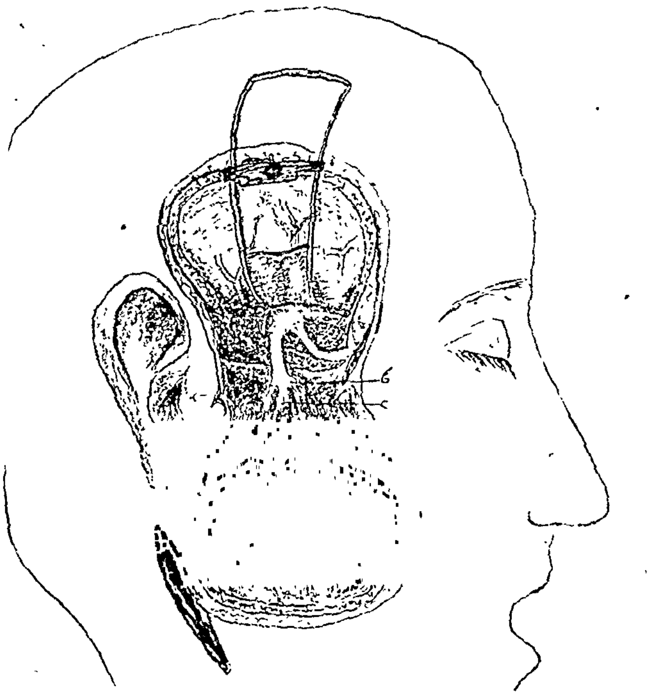
Three Points in Practical Midwifery. G. W. ORD.—The three points in practical midwifery mentioned by Ord are as follows: 1. That the catheter is capable of saving life in the course of breech delivery. He had a case where the body was born and cord pulsating; the head, however, stopped and the cord ceased pulsating, and it seemed that the child would be born asphyxiated. He had a catheter in his bag, a silver, male instrument, and feeling his way he passed it into the child's mouth, who cried down the catheter, the chest became inflated and in a few minutes the head was born, and everything was satisfactory. In looking up the literature he found the plan suggested but not specially recommended in Playfair's work, but the case has been a surprise to every medical man to whom he has mentioned it. The catheter did its work perfectly and in such cases where the necessity of delay of three or four minutes occurs in the birth of the head, the value of this method is obvious. 2. Another point to which he calls attention is the matter of hour-glass contraction. He has in his experience found this frequently after experimental delivery and for the last six or eight years he has pursued the method of "expressing" the child after the birth of the head and has had no hour-glass cases when he has been present before the birth of the child. It seems to him that the cause of hour-glass contraction is due to quick delivery by traction of the child and is avoidable if the *vis a tergo* method only is employed. 3. This is that scoliosis is possibly caused by traction on the infant's body during birth, and that we should realize the damage we may be doing to the spine when pulling in the various directions, as we are advised in text-books. Besides the possible scoliosis another danger may occur, the suprarenal capsules may be injured. He quotes from Clifford Allbutt, who says that hemorrhages in these bodies frequently occur as results of traumatism during birth. Such hemorrhages occur more often in difficult labors and are more frequently met with in pelvic and cephalic presentations. He believes in the soundness of the use of the catheter with an after-coming head, if any hitch occurs, as opposed to traction.

Presse Medicale (Paris), September 14.

Tuberculous Rheumatism. MAILLAND.—Poncet called attention, in 1890, to the infectious pseudo-rheumatism which may accompany tuberculosis at any stage and in any of its forms. It had hitherto been considered true rheumatism, but the inefficacy of sodium salicylate, the character of the pains and the final localization on a single joint, differentiate it from chronic arthritis deformans or acute polyarticular rheumatism, although the clinical manifestations at first are strikingly similar. The termination is different, as the lesions are not fungous, suppurating, nor destructive as in ordinary white swelling, but are merely lesions of irritation, with a fibro-plastic tendency, like the pseudo-rheumatism of infectious diseases, and may range from simple arthralgia to complete ankylosis. Mailland describes a few typical cases, including one of a tibio-tarsal osteo-arthritis presenting the clinical signs of osteo-tuberculosis. It had been preceded two months before by manifestations of articular rheumatism, localized in both shoulders. Signs of tuberculosis were found in both apices. In another case, the knee and both ankles had been affected with supposed acute articular rheumatism at intervals during fifteen years. Finally the pain in the knee became chronic and the affection was recognized as a tuberculous arthritis, soon followed by death in tuberculous cachexia. Characteristic tubercular granulations were found in the pleuræ at the autopsy. In a third case, supposed rheumatism of the shoulder, wrist and knee finally localized exclusively in the knee, which became completely ankylosed. Death from pulmonary tuberculosis occurred in eight months. Tuberculous rheumatism is probably due to the action of the toxins generated by the bacteria. The pain in these infectious pseudo-rheumatisms is usually most intense in the center of the articulation. In true rheumatism, the surrounding parts are most sensitive. Lasegue even claims that there is no intra-articular pain in acute articular rheumatism, and that the joint can be worked without much pain, if the surrounding parts are spared, while in infectious pseudo-rheumatism, this is impossible, as the pain is in the very depths of the joint. When in presence of a case of pseudo-rheumatism, with no gonorrheal nor puerperal antecedents nor any infectious disease capable of inducing such disorders in the joints, the possibility of tuberculosis must be borne in mind. The tuberculous pseudo-rheumatism may be the first clinical symptom of incipient tuberculosis. The treatment is the same as that of any established tuberculosis.

Revue de Chirurgie (Paris), September.

Resection of the Gasserian Ganglion. K. Sapejko.—In most cases of neuralgia involving the fifth nerve, when the pains are limited to one or two branches, and when the effect of peripheral section of the nerve persists for at least six months, the neuralgia is evidently of peripheral origin. But when the pains are located in all three branches, even alternately, the neuralgia must be due to an intracranial affection of the trifacial system. If the pain is confined strictly to one side of the face, the Gasserian ganglion or possibly the root of the nerve, is probably the seat of the trouble. If the pains pass from one side of the face to the other, the central nuclei of the trifacial nerve are probably involved. The majority of cases of peripheral neuralgia can be cured by resection of the nerves affected, but when a rebellious neuralgia invades all three branches—thus demonstrating its central origin—the Gasserian ganglion should be resected without causing delay by preliminary operations. The most plausible supposition in this case ascribes the seat of the lesion to the ganglion. In the cases also, in which the neuralgia has persisted after resection of the peripheral nerve, the removal of the ganglion offers a last resort, to destroy the nerve and render regeneration of the peripheral nerves impossible. Instances have been known of recurrence of this neuralgia even after resection of the Gasserian ganglion, and Sapejko reports a case of this kind in detail. He attributes recurrence to the immense anatomical and technical difficulties of the operation. Some fiber must have been left which finally succeeded in closing the circuit, with recurrence of the pains in consequence. In his patient, sensation returned first at the periphery, followed by faint echoes of the previous neuralgic pains. The Quénu and Krause methods do not allow sufficient access to the field of operation, and there is always danger of injury to the brain as the assistant holds it out of the way during the long and tedious operation. Sapejko has simplified it by the following technique which is comparatively simple, practicable and allows ample and effective drainage of the wound. The flap is 4 cm. long, wider at the tip than the base, which extends the entire length of the zygomatic arch. The latter is sawed across and the great wing of the sphenoid is cut to include the round and oval foramina. This allows more ample access than the Krause and Quénu methods together. The brain is held out of the way by an automatic spring retractor which screws to the intact skull above, while the lower portion forms a metal mirror reflecting light on the ganglion. After isolating the ganglion, each of the three branches and the root must be pulled out and resected over as great an extent as possible. The ganglion is lifted out of its bed, and the root and first branch pulled out and torn as far from the ganglion as possible. The ganglion is then pushed to one side, and the capsule examined and scraped to remove every scrap of ganglion tissue, especially in the vicinity of the cavernous sinus, the root and the first branch. The second branch can be resected to its entrance into the infra-orbital canal. The third branch, with the ganglion still attached, is mobilized and pushed down and out through the small wound below, made for the purpose of provisional ligation of the external carotid, which is the first step in the operation. Its branches are loosened and pulled out as far from the periphery as possible before they are broken off. Connection with the otic ganglion is also destroyed. Drainage is accomplished through the route followed in extracting the third branch. The small incision over the carotid thus serves a triple purpose. If hemorrhage is excessive and interferes with the operation, after the patient is turned with his face to the operator so that the blood can flow out readily, Sapejko advises postponing the resection of the ganglion until two or three days later. In his personal case he operated strictly according to this technique, except that he did not resect the branches, and he attributes the recurrence of the pains to omission of this precaution. He covered the eye with a tight bandage and no inconveniences were observed at any time although there was complete anesthesia of the eye. He points out the necessity of differentiating neuritis from neuralgia, as the former requires treatment directed against the cause—constitutional, infectious, toxic or local inflammation, etc.—while neuralgia never yields to medicinal treatment except in case of mistaken diagnosis or hysteria. In neuralgia the cutaneous sensibility and the reflexes remain normal, while they are diminished in neuritis; the same applies to the strength of the muscles, and no spasmodic contractions are observed as in neuralgia. The pain is also constant and less acute in neuritis. Morphin is the only relief in neuralgia and surgical intervention the only means of cure, and even this may fail unless thoroughly complete. In Garré's case, the Gasserian ganglion was resected, and the maxillary



nerve was subjected to four resections, but after nine of these partial operations, the sensibility of the face was as acute six months later as at first. This case established the possibility of regeneration of the nerves after destruction of the ganglion, of return of sensibility after resection of the ganglion and all the various resections. He found that peripheral irritations were transmitted by the most minute anastomoses of the trifacial nerve through the otic and nasal ganglia, after destruction of the Gasserian ganglion, which is usually considered as the concentrating point of all the conductors.

Malignant Leiomyomata. Devic.—Myomata that develop in the unstriped muscles are usually benign, but a few cases have been published in which their malignant character was evident. They are probably more numerous, but have been classed as sarcomata. Devic describes a case in which a leiomyoma developed in the thoracic wall and recurred at the same point five times after as many operations in the course of the same number of years. When extirpated for the sixth time, the microscope showed the same structure, islands of adult fibro-cells, the tumor starting and extending in the arrectores pili. In a second case a leiomyoma in the outer surface of the thigh recurred three times in a year, and amputation failed to save the patient. In his third case a subcutaneous tumor had been noted for several years in the right external iliac fossa. It began suddenly to increase in size until it was as large as two fists. It was not adherent and not ulcerated. Six months later a tumor developed in the left flank, occupying the larger portion of the abdominal cavity, with ascites, and the liver much hypertrophied, irregular and knobby. At the autopsy six months later, multiple visceral generalization of malignant leiomyomata was found in the kidneys, liver, lungs, pancreas and thyroid body. The primary tumor was entirely subcutaneous, close to the gluteal aponeurosis, but not involving the latter. The secondary tumor in the kidneys weighed 8 kilograms. Six cases of malignant leiomyomata of the uterus or pelvis have been published in Europe, and two, of the stomach, all with visceral metastases. Devic was unable to find more than one case of a subcutaneous tumor of this kind, besides the three cases which he relates in detail. In this case a hard, indolent and movable tumor was noted in the postero—external wall of the right elbow for eight years. It suddenly began to increase in size and the arm was amputated. The cachexia continued and at the autopsy a year later, all the organs were invaded by secondary tumors. The primary tumor was diagnosed "a fasciculated sarcoma or spindle-celled fibroma, developed in the periostium of the lower portion of the humerus." The corrected diagnosis at the autopsy was that of malignant leiomyoma. The interlaced fibers are more regularly arranged in the tumors than in normal tissue or benign myomata, the cut surface is more iridescent. The fibro-cells are all adult and connective stroma is conspicuous by its absence, but giant fibers with nuclei 50 to 100 microns in diameter, are observed in some cases.

Deutsche Med. Wochenschrift (Leipsic), September 19.

Outlining the Organs by Transonance. M. Buch.—If a stethoscope with a very small funnel is applied for auscultatory percussion, it is possible to determine the outlines of nearly all the viscera with remarkable accuracy. The small funnel fits closer to the skin and locates the outlines much more exactly than the ordinary funnel. Buch applies it within the limits of the organ and carries the percussion to the boundary, which is readily recognized by the altered tone. He then transfers the funnel outside the organ and carries the percussion toward it, closing his eyes, so as not to be influenced by the mark he had placed at the outline first determined. After determining the outlines of the heart and lungs, those of the stomach can be located and also those of the other viscera, even of the spleen, colon, etc. The method is so delicate that the slight constriction, above and below, at the point where the fundus blends into the pyloric portion of the stomach is plainly evident. The percussion must be extremely light over the liver so as not to include the resonance of the stomach. Henschen was the first to call attention to this method of "transonance" as he called it. Runeberg does not tap, but rubs the skin lightly.

Muenchener Med. Wochenschrift, September 17.

Puerperal Fever. A. Hegar.—If the temperature does not rise beyond 101 F. after delivery, and if there are no local symptoms, Hegar restricts intervention to removing obstacles to the free flow of the discharge and irrigating the vagina. Temperature of 102 and over indicates drainage, if it persists more than twenty-four hours. Besides the temperature, accelerated pulse, rapid respiration, sleeplessness, tendency to cyanosis and local symptoms are accessory indications for drainage. Hegar thinks that washing out the uterus once or thrice a day is absolutely useless. For several decades he has made a practice of permanent drainage of the uterus, leaving the canula in place and repeating the irrigation every one or two hours. He prefers for the purpose a double glass canula with even the olive divided into two parts, allowing free inlet and outlet to the fluid. He maintains this irrigation and drainage for forty-eight hours, repeating it after suspension for twelve hours, if necessary. He considers chlorin water the best antiseptic for the purpose, and uses it in a 12 to 25 per cent. solution.

Remedy for Seasickness. R. Heinz.—The vomiting center and the respiration center are closely connected locally and functionally on the floor of the fourth ventricle. Heinz asserts that the desire to vomit can be deadened and abolished by taking deep respirations. He found in experiments on dogs that artificial respiration was able to prevent vomiting, even after the injection of apomorphin, which inevitably induces it in one to three minutes. Apnea reduces the excitability of the vomiting center and the desire to vomit subsides. He has found deep breathing effectual in warding off the vomiting of seasickness, both in himself and others.

Tamponing the Abdominal Cavity with Air to Arrest Threatening Intestinal Hemorrhage. G. Kelling.—In experiments on dogs, Kelling found that a negative pressure of 50 mm. mercury was perfectly tolerated, and that it was possible by this means to arrest serious intestinal hemorrhage. From examination of patients he believes that the pressure in the stomach vessels averages about 40 to 80 mm. Hg., and that this same method of air tamponing is clinically applicable.

Wiener Klin. Wochenschrift, September 19.

Operative Treatment of Double Stenosis of the Stomach. H. Schloffer.—Stenosis of the pylorus was associated with pronounced hour-glass stomach in the case described. The patient was a woman of 54 who had suffered from gastric disturbances for twenty-five years. Finally symptoms of stenosis developed, and Schloffer operated by making a longitudinal incision, 7 cm. long, in the constricted portion of the stomach between the fundus and pyloric region. He then stretched the walls of the stomach apart, until the incision was transformed into a transverse linear wound, which he sutured in this position, perpendicular to the longitudinal axis of the stomach. The organ was adherent to the posterior abdominal wall. He then made an anterior antecolic gastroenterostomy between the pyloric portion of the stomach and the upper jejunum, concluding with Braun's side-to-side anastomosis 20 cm. below, between the afferent and efferent loop. The patient was dismissed in sixteen days and is in far better health than for years previous to the operation. The only disturbance to date is a sensation of oppression in the stomach when she swallows food without sufficient mastication. The operation was performed at Woelfler's clinic, and the communication states that Braun's anastomosis is adopted there as a routine procedure to complete all gastro-enterostomies.

Myalgia Not Due to Getting Chilled; Its Prevention and Treatment. J. Elgart.—Ruhemann examined 7000 cases of affections of the respiratory organs and 8000 of so-called rheumatic affections, in order to determine the causal significance of becoming chilled. He became convinced that it is far from possessing the importance attributed to it, and that it has no effect except on the predisposed organism, that is, where bacteria are already present. In the absence of bacteria, getting chilled is unable to determine the most insignificant angina or rhinitis. Knövengal came to similar conclusions from a study of soldiers in barracks, but Chodounsky's recent experiments are still more conclusive. He inoculated 102 animals with cultures after previously chilling them, reducing the temperature by eighteen degrees, and found that the susceptibility to infection was not enhanced but rather diminished. Chilling the animals even as long as eight hours, failed to induce any affection except in a few instances of slight hyperemia of the lungs, which vanished without a trace in three days. He is a man over sixty years of age and not at all robust, but he experimented on himself, exposing himself naked to a current of air of 47 F., or after running till the sweat was pouring from his body, he rapidly undressed and stood in a draft of air at 37.5 F. only quitting in forty minutes because he was so cold. In other tests, after bathing the upper portion of the body with warm water, he exposed it to a current of air of 25 F. He also dipped his shirt in water at a temperature of 41 F. and putting it on at once, remained in a strong draft in damp weather, the thermometer at 39 F., and wore the shirt the remainder of the afternoon. He found that the temperature of the body rose two or three degrees during this chilling process. When the cold acts on a heated, reddened skin, the cutaneous vessels contract and the temperature rises above normal. He formally announces that currents of air under the most extreme conditions have no action on man. They do not induce catarrh of the respiratory organs, nor articular rheumatism nor neuralgia. He attributes the greater prevalence of these affections in winter to the lesser amount of sunshine with its bactericidal potency, and to the less hygienic manner of living, housed indoors. He also points out that we use cold packs, bath, etc., in combating infectious diseases, even in those in which we ascribe getting chilled as the primal cause. (Bohemian Clinical Archives, 1900.) Elgart accepts Ruhemann's view that the presence of bacteria is an indispensable preliminary to the origin of an affection from getting chilled. However, as bacteria can not be present in sound muscles, this explanation does not apply to myalgia or myopathy. He explains them as the result of injury of some muscular fiber which is atrophied from disuse or degenerated from age or from the action of some infectious disease. The muscle is abnormally fragile and the fiber may rupture from over-strain or in consequence of the contraction of the sound fibers, in which the degenerated fiber is unable to participate. The rupture is probably accompanied by some microscopic hemorrhage, with consequent compression of the nerve terminals and pain, the myalgia, and stiffness from the instinctive desire to immobilize the part. As the extravasation is resorbed, the pains disappear. Continuous stretching of sound muscles may induce myalgia as after unusual exertion in climbing, etc., but after the muscles have become habituated to the exertion, the myalgia disappears. Lumbago frequently befalls a person as he is stepping hastily into a carriage. The trunk is bent forward, the head down, and the lumbar muscles are submitted to a sudden strain, which may rupture some fiber. Besides this idiopathic myalgia, there is the symptomatic form, accompanying various infectious diseases. The "rheumatic stiff neck" which occurs so often with a febrile tonsillitis or rhinitis, is usually first noted as the subject is washing in the morning. In bathing his face and neck he twists his head around, and some muscular fiber is ruptured. If he awakes with the stiff neck, he has probably slept with the head in some strained position. These symptomatic myalgias are liable to occur in any infectious disease, and the latter may have been so trifling that the subject never noticed or has forgotten it, but the consequent slight degeneration of the muscular fiber is the cause of the rupture—not getting chilled. The more virulent the toxins in an infectious disease, the more intense the degeneration and the more fragile the muscle fibers. The prophylaxis of idiopathic myalgia consists in not allowing the muscles to become atrophied from disuse, by practicing gymnastics, sports, etc., avoiding overstrain as much as atrophy, combining and individualizing each case, with heed to the ordinary occupation, age, etc. In infectious disease, the prophylaxis is completely the reverse—here every effort must be made to avoid stretching the degenerated muscle fibers. Rest in bed protects the muscles from traumatic alterations, and during convalescence the muscles must be spared abrupt strains. Even during slight infections the muscles must be carefully guarded in the same way and gradually accustomed again to ordinary movements and exercises. Treatment of idiopathic myalgia includes diaphoretics, laxatives and massage, but the symptomatic form requires only rest. Elgart ridicules the fear of catching cold, which robs life of many of its joys and is an antiquated superstition. Appropriate nourishment and physical exercise are the true means of protection against myalgia, not precautions against getting chilled. The most warmly protected portion of the body is the lumbar region, and yet it is the chosen seat of myalgia, which is seldom if ever observed in the hands or face.

Queries and Minor Notes.

DISLOCATION OF HIP DURING LABOR.

RICHMOND, VT., Sept. 28, 1901.

To the Editor:—At the next meeting of the Vermont State Medical Society I am down for the discussion of a paper on "Dislocation of Hip During Labor." Can you give me any information on this subject, its cause, frequency, treatment, etc., or direct me to where it can be found?

C. S. S.

ANS.—This subject has been extensively discussed. There are a number of abstracts in the last few volumes of THE JOURNAL. The subject was discussed at length in the German Congress of Surgeons, in Berlin, in 1899, and was noticed in THE JOURNAL, May 13, of that year. Other articles are those of Whitman, in the *Medical News* of Oct. 7, 1897, noticed in THE JOURNAL of October 14; of Wirt, in the *Cleveland Medical Gazette,* April, 1900, and abstracted in THE JOURNAL of May 12; of Bradford, in the *Boston Medical and Surgical Journal,* October 25, noticed November 11; of Bade, in the *Centralblatt f. Chirurgie,* July 7. 1900. JOURNAL of August 4; Ducrocquet, *Bulletin Academy de Medicine,* May 29, 1900, in THE JOURNAL of July 7; and Ghillini, in the *Munich. Med. Wochen.* of March 26, 1901, and THE JOURNAL of April 27. There are probably one or two other more recent ones which will be easily found on reference to back numbers.

OKLAHOMA PRACTICE LAWS.

TOLEDO, OHIO, Sept. 28, 1901.

To the Editor:—I see in your last issue an item for granting certificates to the practice of medicine in the Territory of Oklahoma. Would you be so kind as to inform me in regard to the practice of medicine in this territory?

W. H. G.

ANS.—In Oklahoma one must be either a graduate in medicine or must pass an examination satisfactory to the Board. If not a graduate, one must give proof of having actually engaged in the practice of medicine for not less than five years. The fee for examination is $30. No person is allowed to practice medicine who is not of good moral character, or who is an habitual drunkard. In case the diploma is lost, proof by affidavit of the fact and the affidavit of two reputable citizens of the county in which the applicant resides, will be necessary. The fee for the registration of the diploma is $2. The secretary of the Board is Dr. E. E. Cowdrick, Enid, Oklahoma.

FRENCH AND GERMAN SCHOOLS.

NEW BEDFORD, MASS., Sept., 23, 1901.

To the Editor:—Please advise me from whom or where I can get information in regard to German and French medical schools and clinics.

E. E. F.

ANS.—There is no publication available in our language, so far as we know, that gives a full account of the medical schools and clinics in Germany. A number of years ago Dr. Hun, Albany, published a work on this subject, but it has gone out of print, and would probably not be reliable for the present time. The French periodical, *Le Progrès Médical,* publishes an educational number once a year, giving an account of the French schools, but we do not know of any giving the same information for Germany. The last issue of this kind was Nov. 10, 1900. Another is probably now nearly due.

OVARIAN EXTRACT.

ST. CLAIR, MINN., Sept. 30, 1901.

To the Editor:—Will you kindly state where I can find recorded the latest observations on the use of ovarian extract in the treatment of post-operative menopause?

C. J. H.

ANS.—We would refer the inquirer to Krusen's article in the *Johns Hopkins Hospital Bulletin,* of July, 1901.

SUBCUTANEOUS PARAFFIN PROTHESIS.

Findlay, Ohio, Sept. 25, 1901.

To the Editor:—In The Journal of July 27, 1901, p. 292, you gave an article by Gersuny on subcutaneous paraffin prothesis. I have tried to get the unguentum paraffin a number of places, but have failed. Can you tell me where I can get it? Also give me Gersuny's address. F. B. E.

Ans.—The material used by Gersuny is American white vaselin, which is soft at ordinary room-temperature. Gersuny's address is Vienna, in Austria.

The Public Service.

Army Changes.

Movements of the Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Sept. 5 to 25, 1901, inclusive:

Harry D. Belt, contract surgeon, from duty at Fort Trumbull, Conn., via New York City, to Havana, Cuba, for assignment in the Department of Cuba.

William Donovan, contract surgeon, now in New York City, awaiting orders, will proceed to Madison Barracks, N. Y., for duty at that post.

Rudolph G. Ebert, major and surgeon, U. S. Army, to report in person to the commanding officer, Vancouver Barracks, Wash., as post surgeon, relieving Lieut.-Col. J. B. Girard, deputy surgeon-general, U. S. Army.

Joseph H. Ford, lieutenant and asst.-surgeon, U. S. Army, leave of absence granted.

William W. Gray, major and surgeon, U. S. Army, leave of absence granted.

Charles R. Greenleaf, colonel and assistant surgeon-general, U. S. Army, leave of absence granted.

Eugene H. Hartnett, lieutenant and asst.-surgeon, U. S. Army, member of a board in New York City, for the examination of officers of the line for transfer to the Ordnance Department.

Luther S. Harvey, captain and asst.-surgeon, Vols., recently appointed and now at Holguin, Cuba, is relieved from duty in the Department of Cuba, and will proceed to San Francisco, Cal., en route for assignment in the Division of the Philippines.

Herbert I. Harris, contract surgeon, from Fort Snelling, Minn., via New York City, to Havana, Cuba, for assignment in the Department of Cuba.

E. P. Howell, contract surgeon, leave of absence from the Department of the Colorado extended.

John F. Leeper, contract surgeon, now at Fort Leavenworth, Kan., will proceed to Jefferson Barracks, Mo., for temporary duty.

John R. McDill, major and surgeon, Vols., resignation accepted, to take effect Sept. 11, 1901.

Marion B. McMillan, contract surgeon, leave of absence from the Department of Cuba extended.

Clarence B. Millhoff, lieutenant and asst.-surgeon, U. S. Army, leave of absence granted.

Elbert E. Persons, lieutenant and asst.-surgeon, U. S. Army, to duty at Fort Snelling, Minn.

Henry du R. Phelan, captain and asst.-surgeon, Vols., recently appointed and now in San Francisco, Cal., will report for transportation to Manila, P. I., for assignment in the Division of the Philippines.

Irving W. Rand, captain and asst.-surgeon, U. S. Army, to duty at Fort Trumbull, Conn.

Henry I. Raymond, major and surgeon, U. S. Army, member of a board at Chicago, Ill., to examine certain persons for appointment as lieutenants in the U. S. Army; member also of an army retiring board.

Walter Reed, major and surgeon, U. S. Army, detailed as an additional officer to represent the Medical Department of the Army, at the annual meeting of the American Public Health Association, to be held at Buffalo, N. Y., Sept. 16 to 20, 1901.

George H. Richardson, contract surgeon, from Plattsburg Barracks, N. Y., to Fort Apache, Arizona, for duty at that post.

David M. Roberts, contract surgeon, now on duty at Fort Howard, Md., to proceed to Fort Sam Houston, Tex., for temporary duty, on the completion of which he will return to his proper station.

Frederick F. Russell, lieutenant and asst.-surgeon, U. S. Army, from Mayaguez, P. R., to New York City, reporting on his arrival by telegraph to the Adjutant-General of the Army for instructions.

H. Eugene Stafford, captain and asst.-surgeon, Vols., resignation accepted by the President, to take effect Sept. 20, 1901.

Richard P. Strong, lieutenant and asst.-surgeon, U. S. Army, former [illegible] to duty at the Army and Navy General H[illegible] Ark., revoked; he will report in person to the [illegible] S. Army, for temporary duty in his office, [illegible] which he will proceed to San Francisco, Cal., e[illegible] I., for duty as Director of the Government [illegible] Manila, P. I.

Eugene [illegible] and surgeon, U. S. Army, now in this city, will proceed to Fort Leavenworth, Kan., for duty at that post.

Fred R. Underwood, contract surgeon, relieved from duty at Fort Leavenworth, Kan., to proceed to San Francisco, Cal., en route for assignment in the Division of the Philippines.

Timothy E. Wilcox, lieut.-col., and deputy surgeon-general, U. S. Army, member of a board in Chicago, Ill., to examine certain persons for [illegible] as lieutenants in the U. S. Army; member also of an [illegible]

Allie W. [illegible] and asst.-surgeon, U. S. Army, relieved from further duty at Fort Columbus, N. Y., to proceed to Mayaguez, P. R., for duty at that post.

Navy Changes.

Changes in the Medical Corps of the Navy, week ending Sept. 28, 1901:

Asst.-Surgeon F. A. Asserson, Asst.-Surgeon J. W. Backus ordered to the Naval Hospital, Cavite, P. I.

Asst.-Surgeon A. E. Peck, ordered to the *Manila.*

Asst.-Surgeon C. E. Burr, resignation accepted, to take effect September 25.

Asst.-Surgeon D. C. Bebe, detached from the *Marietta*, and ordered home to wait orders, when vessel is put out of commission.

Asst.-Surgeon E. J. Grow, detached from the *Castine*, when put out of commission, and ordered home to wait orders.

P. A. Surgeon E. M. Shipp, detached from the Naval Hospital, Cavite, and ordered to the *Celtic.*

Asst.-Surgeon W. L. Bell, detached from the *Celtic* and ordered to the Naval Hospital, Cavite, P. I.

Asst.-Surgeon J. W. Backus, detached from the Naval Hospital, Cavite, P. I., and ordered to the *Brooklyn.*

Asst.-Surgeon F. A. Asserson, detached from the Naval Hospital, Cavite, and ordered to the *General Alvas.*

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service for the seven days ended September 26, 1901:

Surgeon S. D. Brooks, granted leave of absence for fourteen days from September 29.

P. A. Surgeon H. S. Cumming, granted leave of absence for thirty days, on account of sickness, September 26.

Asst.-Surgeon S. B. Grubbs, granted leave of absence for eleven days from September 25.

Asst.-Surgeon H. B. Parker, to proceed to Jacksonville, Fla., for special temporary duty.

Asst.-Surgeon W. C. Hobdy, to proceed to South Atlantic Quarantine as inspector.

Asst.-Surgeon F. J. Thornbury, relieved from duty at Dutc Harbor, Alaska, and directed to return to the States.

A. A. Surgeon L. P. Gibson, granted leave of absence for te days on account of sickness.

A. A. Surgeon E. B. Hallett, granted leave of absence for thre days from September 24.

A. A. Surgeon A. B. McDowell, granted leave of absence fo twenty days from October 12.

A. A. Surgeon Henry Owen, granted leave of absence for te days from September 24.

A. A. Surgeon S. D. Robbins, granted leave of absence for thirt days from September 6, on account of sickness.

Hospital Steward M. R. Mason, relieved from duty at Dutc Harbor, Alaska, and directed to return to the States.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plagu have been reported to the Surgeon-General, U. S. Marine-Hospita Service, during the week ended September 28, 1901:

SMALLPOX—UNITED STATES.

California: San Francisco, Sept. 1-15, 4 cases.

District of Columbia: Washington, Sept. 14-21, 9 cases.

Massachusetts: Boston, Sept. 14-21, 9 cases.

Michigan: Detroit, Sept. 14-21, 1 case.

New Jersey: Newark, Sept. 14-21, 18 cases.

New York: Sept. 14-21, Elmira, 2 cases; New York, 3 cases, death.

Pennsylvania: Lebanon, Sept. 8-15, 5 cases; Philadelphia, Sep 14-21, 38 cases, 4 deaths.

Wisconsin: Green Bay, Sept. 15-22, 1 case.

SMALLPOX—FOREIGN.

Belgium: Aug. 31-Sept. 7, Antwerp, 4 cases; Ghent, Aug. 31 Sept. 7, 1 death.

Brazil: Rio de Janeiro, Aug. 4-18, 114 deaths.

Colombia: Panama, Sept. 9-16, 12 cases.

Egypt: Cairo, Aug. 26-Sept. 7, 1 death.

France: Paris, Aug. 24-Sept. 7, 10 deaths.

Great Britain: Aug. 31-Sept. 7, Edinburgh, 1 case; London, 92 cases, 8 deaths.

India: Bombay, Aug. 20-27, 1 death; Calcutta, Aug. 18-24, 2 deaths; Madras, Aug. 10-23, 19 deaths.

Naples, Aug. 24-Sept. 7, 182 cases, 26 deaths.

Nova Scotia: Halifax, Sept. 14-21, 9 cases, 1 death.

Russia: Aug. 24-31, Moscow, 4 cases, 2 deaths; St. Petersburg, 4 cases.

Spain: Madrid, June 17-July 15, 6 deaths; Malaga, Aug. 31-Sept. 7, 5 deaths; Valencia, Sept. 3-10, 7 deaths.

YELLOW FEVER.

Brazil: Rio de Janeiro, Aug. 4-18, 2 deaths.

Costa Rica: Port Limon, Aug. 1-Sept. 14, 12 cases, 6 deaths.

Cuba: Havana, Sept. 7-14, 1 case.

Mexico: Aug. 24-31, Merida, several cases; Progreso, 1 case.

CHOLERA.

India: Bombay, Aug. 1-27, 4 deaths; Calcutta, Aug. 18-24, 10 deaths; Madras, Aug. 10-23, 201 deaths.

Japan: Yokohama, Aug. 18-24, 1 case.

Straits Settlements: Singapore, July 27-Aug. 3, 2 deaths.

PLAGUE—UNITED STATES.

California: San Francisco, Aug. 29-Sept. 20, 4 cases, 2 deaths.

PLAGUE—FOREIGN.

China: Hongkong, Aug. 3-10, 10 cases, 12 deaths.

India: Bombay, Aug. 20-27, 203 deaths; Calcutta, Aug. 18-24, 32 deaths; Karachi, Aug. 11-25, 8 cases, 5 deaths.

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Original Articles.

THE TREATMENT OF MALIGNANT DISEASE.[*]

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NEW YORK CITY.

The treatment of malignant disease is of paramount importance. The questions of etiology, symptomatology and classification of malignant disease are insignificant as compared with the treatment. This subject can only be appreciated by a recognition of two salient facts: 1, the increase of malignant disease; 2, the universal mortality.

To better appreciate the vital subject under discussion it is pertinent to consider for a few moments the increase of malignant disease in order to better understand the importance of its treatment. Humanity at large, seeks for relief from this dreadful scourge, and humanity appeals to the surgeon for help, as he is the only one who can effect a cure.

The increase of cancer is a fact which as it is not understood, can not be explained. Through the kindness of Mr. Frederick L. Hoffman, of the Prudential Life Insurance Company, I am indebted for some information which has never been published, and which is as interesting as it is startling. For example, he has prepared some statistics upon the increase of cancer of the breast in Rhode Island and Connecticut, in Philadelphia, and in the District of Columbia. While these statistics are limited to cancer of the breast, they serve well our purpose, as a general basis of calculation, for cancer affecting other organs. These statistics show that for the past thirty years cancer of the breast has materially increased, and the rates have been calculated on the basis of 1,000,000 of population.

In Rhode Island the increase in the mortality of cancer of the breast has been 115 per cent., if we compare the period from 1876 to 1880 with the period from 1896 to 1900.

In Connecticut unfortunately the data do not go back further than 1882, so that strict comparison is not possible; but an approximate comparison indicates an increase of mortality since that date of 12 per cent.

In the City of Philadelphia the period from 1861 to 1865, compared with that of 1896 to 1900, shows an increase of 179 per cent. in the mortality of cancer of the breast. It is only fair to add that from the period of 1876 to 1880 to the period from 1896 to 1900 the increase was only 12 per cent., the explanation for which will be considered later.

In the District of Columbia there has been an increase in the mortality of cancer of the breast of 50 per cent. from the period of 1876 to 1880 till 1896 to 1900. The chart will enable one to see at a glance the increase in the mortality of cancer of the breast during the past thirty years.

Perhaps an illustration of the increase of cancer in this environment might be pertinent. In the City of Milwaukee in the year 1878 there were 25 deaths from cancer per 100,000 population. Levings assigns as an explanation of this condition the fact of "the increased average age of man, and the necessary and consequent increased prevalence of diseases like cancer, in which hereditary predisposition plays an important part." Whatever theory is accepted as to the cause of increase it matters little. The fact stands out in the foreground, in bold relief, that the disease is increasing, and this behooves the surgeon to continue investigations until he can ascertain the cause, and apply the remedy, to the disease.

The death rate from cancer for the United States in 1890 is 53 per 100,000 of population, for England 67, for Scotland 60, for Austria 52, for Ireland 45, for Prussia 43, for Italy 42.

If now, instead of countries, the different states of the Union are considered, it is found by the census report for 1890: Vermont 75 per 100,000, New Hampshire 69 per 100,000, Massachusetts 66 per 100,000, Connecticut 55 per 100,000; New York 53 per 100,000, District of Columbia 49 per 100,000; New Jersey 47 per 100,000, and Delaware 35 per 100,000.

In all of the calculations by states the age element is ignored. Therefore, in states like Vermont and New Hampshire, where the proportion is so great, allowance must be made for the fact that the emigration of the young people to the Western states especially leaves proportionately to New England a larger number of persons liable to death from cancer.

The increase average age of human life does not altogether account for the increase of cancer. There are no accurate life tables for this country, for a period of thirty years; but there are such tables in England, which may serve as a basis for calculation in this country. In the period from 1838 to 1854 the expectation of females at birth was about 41 years. In the period from 1881 to 1890 it increased to about 47 years. These figures show an increase of about 5 years, which is equal to about 12 per cent. It is upon such a calculation as this that Levings and others have offered an explanation of the increase of cancer to the increase of the average length of life. It is, however, erroneous to reason from this slender basis of facts, because, in the first place, the expectation of life affects the entire period of life, and, in the second place, the actual gain made at birth may and, as a matter of fact, does, affect only the you age period. In other words, the expectation of lif have been increased at birth, while the decrease may have taken place at older years, or at the time when the patient has reached the cancer age. This has actually been the case, since for England and Wales the expectation of life at 45 years and over is now somewhat less than it was fifty years ago.

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[*] Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section: Drs. W. J. Mayo, H. O. Walker, and A. J. Ochsner.

We must look, therefore, to some other cause to explain the increase of cancer than the statement of the increase average length of life.

On the other hand, it is maintained by some that cancer is increased apparently and not in reality. Newsholme claims that this apparent increase is due to greater accuracy in the returns of death certificates, and to the diminution of the number of death certificates in which indefinite headings are employed. He claims that if we follow the statistical method which is adopted to demonstrate the increase of cancer, along similiar lines we can prove that the number of individuals dying from old age has enormously decreased. This is erroneous, because death certificate returns which formerly were made out with old age as the cause of death, now have the real cause assigned to them.

In other words, that the increase in the number of correct death certificates, and the decrease in the number of *incorrect certificates*, bring out apparently the fact that cancer is on the increase, whereas it may be the reverse. This is in marked contrast to Park's statement that if in the next ten years the increase of cancer mortality is maintained there will be more deaths from cancer in New York State than from tuberculosis, smallpox and typhoid fever combined.

There are some very interesting data which show the increase of cancer of the breast in certain periods, each period consisting of five years. In the City of Philadelphia, if we start with the first period covering the years 1861 to 1865, inclusive, the increase in the mortality of cancer of the breast down to the period of 1896 to 1900 is 179 per cent.; 150 per cent. of the 179 per cent. was gained up to the year 1880. The increase in the mortality of cancer of the breast from the fourth period ending in 1880, to the five years ending in 1900, is only 12 per cent. In other words, the brilliant diminution in the increase of cancer of the breast in Philadelphia is due to the magnificent results of surgical work in that city. If this standard is kept up, in the five years to come the surgery of *Philadelphia* will reduce the mortality of cancer of the breast to a percentage which will be phenomenal.

In the District of Columbia the mortality of cancer of the breast in the four periods of five years each, beginning with the period of 1876 to 1880, till the period of 1896 to 1900, is 50 per cent.

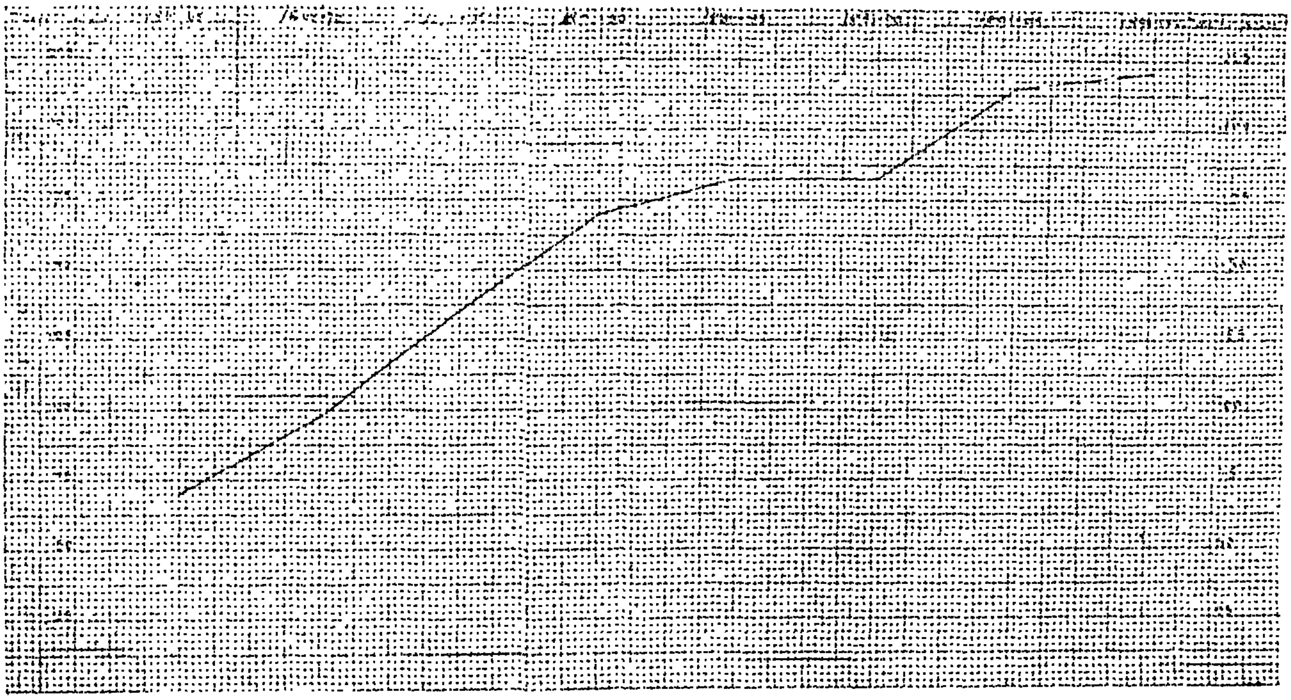
In Rhode Island the increase of mortality of cancer of the breast for this same extent of time is 115 per cent.

In Connecticut the data do not extend far enough back to make a comparative estimate; but from the sixth to the eighth periods, i. e., from 1882 to 1900, the increase is 12 per cent.

It seems irrelevant to dwell at length upon the actual or apparent increase of cancer, the paramount subject is the treatment, since in England alone there are 7,000 deaths annually from carcinoma, and 30,000 patients suffering at all times from the disease. In the United States, in 1890, there were over 18,000 deaths from carcinoma; in fact, there were probably more than 18,000, since in many states no registration system provides for accurate mortality returns, and in all probability 25,000 deaths is not too high an estimate.

Cancer causes nearly half as many deaths in the United States in one year as are caused by accidents and injuries of all kinds and descriptions; and it is responsible for more deaths, in one year, in the United States than the sum total due to erysipelas, tetanus, hydrophobia, lightning, appendicitis, gunshot wounds and joint disease, together with other well-known surgical affections. These facts emphasize the importance of the subject under discussion.

Before discussing the treatment of malignant disease by surgical interference, *it is necessary to review*, in a cursory manner, the principal methods of treatment at



MORTALITY FROM CANCER OF THE BREAST AMONG FEMALES IN RHODE ISLAND, CONNECTICUT, PHILADELPHIA AND DISTRICT OF COLUMBIA. PREPARED BY MR. FREDERICK L. HOFFMAN.

present in vogue. Reference to these methods is made in order to complete the list of recognized plans of treatment. The different methods to be described before discussing the surgical operations are: 1, the *x*-rays; 2, electricity; 3, caustics; 4, drugs, and 5, toxins.

The Roentgen Rays.—Dr. Francis H. Williams reports the use of the *x*-rays in the treatment of cancer. He employed them for five minutes daily, but thinks that it is not necessary to make such frequent exposures. He reports excellent results in those cases where the cancer was superficial. Dr. Williams believes that the *x*-rays will prove of great value in cases of cancer involving the deeper structures.

The conclusions at which Dr. Harvey P. Towle arrived, in reference to the *x*-rays as a therapeutic agent, are so concise and pertinent that I shall quote them verbatim: "1, that the real nature of the *x*-rays is not yet determined definitely, nor is it known whether the therapeutic action following their use is due to the action of the rays themselves, or something of electrical origin accompanying them; 2, that the treatment is not without danger unless the greatest care is used; 3, that the effects of the *x*-rays remain for a long time, and recovery is very slow; 4, that whatever may be the exact origin of the effects produced, a definite reaction is caused in the skin by the use of the *x*-rays; 5, that the changes induced in the skin are similar, histologically, to those seen in ordinary inflammation; 6, that the *x*-rays are not proved to have any bactericidal power; 7, that their therapeutic effect is probably due to the inflammation excited; 8, that hair can be removed by their use, and that lupus and several other diseases can be healed over; 9, that in a few reported cases we may fairly assume that a permanent cure has been effected; but that in a majority of the reported cases, too little time has elapsed to rule out the possibility of a return of the disease; 10, that the effect of exposure to the *x*-rays is so extraordinarily slow in disappearing that months should elapse before an absolute cure is assumed; 11, that while the permanency of the cure effected may perhaps be doubtful as yet it is certainly desirable to experiment further."

The treatment of malignant growth by the *x*-rays is therefore still in embryo, and the time is too short to predict, with any degree of certainty, as to the permanency of the few cures that have been claimed; our knowledge of the modus operandi of the *x*-ray is still shrouded in mystery. The serious objections to the use of the *x*-rays in the treatment of malignant disease can, in a measure, be overcome, by shortening the length, and diminishing the frequency of the exposures, and by more accurate knowledge as to the distance of the tube from the tumor.

How it will cure malignant disease no one knows beyond the fact that the *x*-ray "acts by its electric action or by the electrolytic discharges generated in the integument by a high potential current." All that can be said, at the present time, is, that the results of treatment by the *x*-rays are still *sub judice* and that more data must be forthcoming before any opinion can be expressed as to their value.

Electricity.—The use of electricity in treatment of malignant disease is only mentioned for the purposes of condemnation. In this field of surgery it has no place as a therapeutic agent, and while its use is of value in certain diseases, in this special department it is worse than useless.

Caustics.—The use of caustics is limited to those forms of epithelial ulcers which are situated upon the skin and are very superficial. In this variety of epithelioma, as well as in myxomata, situated upon the surface of the integument, the employment of caustics has been attended by a certain amount of success. There are no statistics as to the permanency of the cure that I have been able to find, with the exception of here and there an isolated case. I have never seen an epithelial ulcer upon the skin the entire removal of which, by free incision, is not preferable to the application of escharotics. I have had good results in small myxomata treated by fuming nitric acid; but, as a rule, my experience has taught me that the remedy is unsurgical in most cases, and that only in exceptional forms of malignant disease is the use of escharotics to be resorted to as a means of permanent cure.

When it comes to malignant disease, such as sarcoma of the bone, or cancer of the breast, I deem it unsurgical to subject the patient to such treatment. In these cases surgical intervention is the only proper resource. I am aware that there are men in the regular profession who treat the different varieties of malignant disease by caustics; but I have searched the literaure of surgery in vain for any reports of permanently cured cases, and I have been unable to obtain by personal communication any data upon the great question of permanent cure. If these men have their statistics they should publish them for the benefit of the profession, and on behalf of suffering humanity.

The arguments used by the advocates of the caustic treatment appear fallacious in the extreme, since the pain of the caustic is nearly as severe as incision, and lasts much longer. The voidance of an anesthetic is claimed as another argument in favor of caustics; but with Schleich's method of anesthesia in the smaller growths, and by the use of nitrous oxid gas or oxygen, in the larger ones, this objection, so strongly urged, is entirely overcome.

Even in amputation of the breast, in aged patients, I have employed the gas with no pain, but little shock and no disagreeable after-effects of anesthesia. The avoidance of shock and hemorrhage are also claimed by the advocates of the caustic treatment; but the shock of incision in local anesthesia, or under the influence of gas, is not greater than the prolonged agony caused by escharotics, besides the dangers of secondary hemorrhage are obviated, as well as a long period of convalescence incident to the repair of a sloughing wound.

The employment of caustics in the treatment of malignant disease, with but rare exceptions, is therefore to be condemned; because the method is attended by pain, does not effect permanent cures, causes extensive sloughs with the consequent dangers of secondary hemorrhage and septicemia, and requires great loss of substance, which takes a long time to repair and then often in an unsatisfactory manner. In no way can the caustic remove diseased tissue which the scalpel can not better accomplish, and in no way is the healing better or the cure as permanent as by a clean aseptic operation.

Drugs.—Launois, in February, 1901, reported promising results in the subcutaneous injection of chlorohydrate of quinin in inoperable cases of malignant disease. Berger employed the serum of Wlaiev and maintained that the functional symptoms were improved, but that the growth itself was in no way affected. Petrini injected 5 centigrams of this serum according to Gautier's method, and gradually raised it to 12 centigrams in a case of multiple sarcomata, and claims to have cured the case in six weeks. There is no information as to the permanency of the cure, and therefore no conclusion can be drawn upon this case owing to insufficient data.

Tuffier recommends the use of the drug; but he gives no cases from which any conclusions can be drawn.

Formalin has been hypodermically injected; but this plan of treatment has only proved a failure. In fact, it seeems a waste of time to review any more remedies suggested for the cure of cancer. They are all of one class, and they are all followed by failure. They are all injurious because their employment occupies valuable time and only postpones an operation, the only method of treatment worthy of adoption.

Pyoktanin has been suggested as a remedy by Mosetig Moorhof, who employed it with a view to destroying the nuclei of the proliferating cells of cancer. This remedy, like all the others, afforded, in some cases, temporary benefit; but I am unable to find any reports regarding the permanency of the cures.

Thyroid extract has recently been extolled as a curative agent. I have tried this drug in a large number of cases, but in no one as yet have I seen a permanent cure. Thyroid extract will retard the rapid ulceration in cancer; it will relieve the pain in some cases; it will control the hemorrhage; it will dispel in many cases the disagreeable odor arising from the infection; it will prolong life; it will make the patient comfortable, but it will not cure. This is all that can be expected from thyroid extract, and this drug stands as a prominent example of all the drugs that have been introduced into practice as specifics in malignant disease.

Chian turpentine has been extensively employed as a curative remedy in cancer. This medicine was introduced by Clay of Manchester, and his reports are such as to attract attention to its use. Personally, I have been greatly disappointed in the remedy, as I have never seen a case of cancer cured by it; although, in some instances, I have observed a diminution in the pain, ulceration, hemorrhage and odor. This, however, has never been so well marked as in the case with the thyroid extract.

Methylene-blue has been highly extolled by some surgeons. I am frank to confess that notwithstanding its administration in many cases I have never seen a cure effected by it, and only in a few instances any temporary benefit. It decreases the odor to a certain extent, perhaps arrests in a certain degree the ulceration, and in this way controls the secondary hemorrhages. At one time I was quite confident that it would prove of signal value; but a more extended experience has led me to believe that it has failed to accomplish that which was expected of it.

Potassium iodid in very large doses has been employed with a view to curing sarcoma. Some authorities have reported cases of cure following the use of this drug. I must confess that I have never seen a case of sarcoma cured by potassium iodid. I have seen some inflammatory neoplasms disappear, and can recall several cases of absorption of exudations which were large enough to produce pressure symptoms.

In one case of complete hemiplegia 600 grains of the iodid given daily, and continued for several weeks, caused the intracranial exudation to absorb, and complete recovery followed. It is now over ten years since the attack. In still another case I saw a mono-brachial paralysis disappear after using the iodid in several hundred grain doses daily. These cases, however, had without doubt a specific history, and such neoplasms must not be confounded with sarcoma, although the histologic formation may be very similar. It is precisely in this class of cases that errors of diagnosis have been made, and consequently cures reported which were supposed to be sarcoma, when in reality the growths were not malignant.

The *toxins* of the streptococcus erysipelatis and the bacillus prodigiosus mixed is a method as advocated by Fehleisen and Coley. The treatment is carried on by hypodermic injections of small and increasing doses. The best results are obtained in the mesoblastic growths, and the giant-celled sarcomata. It is not to be employed as a substitute for operation and only in cases where the tumors are inoperable. Coley's article on the results of this treatment is worthy of perusal. The writer has personally seen but temporary benefit from this method, but in no case a cure.

The writer referred to Coley's paper,[1] in which he gave the results of 140 cases of inoperable sarcoma treated with the mixed toxins of erysipelas and bacillus prodigiosus. In 24 of these the tumor completely or partially disappeared as a result of the treatment. In 84 of this series the sarcoma was round-celled; in 21 spindle-celled; in 9 melanotic; 2 chondrosarcoma; in 12 the type of cell was not stated, though the diagnosis was confirmed by the microscope; 6 were inoperable sarcoma, the diagnosis resting upon clinical symptoms, combined, in most cases, with a history of repeated recurrence.

In 40 cases of the round-celled, or slightly less than half, more or less improvement was shown by decrease in size or cessation of growth. In only 4 of these was the treatment permanently successful. Of 21 cases of spindle-celled sarcoma 10 disappeared entirely; all the remainder showed marked improvement. In no case of melanotic growth more than temporary improvement was noted. At the time of this report 8 cases had remained well from 3 to 6 years; 9 from 1½ to 3 years.

In addition to these personal results, the paper contained a summary of results in 35 cases successfully treated by other surgeons employing the same method. Of these 35 cases, 10 were round-celled; 10 spindle-celled; in 5 the diagnosis was clinical only; in 5 there was, in addition to the clinical signs of sarcoma, a history of recurrence after operation; in 4 the diagnosis of sarcoma was confirmed to microscopic examination, but the type not stated; 1 was endotheliosarcoma. Of these 35 cases 26 disappeared completely; 2 others decreased so much that only a small node was left, which was easily excised. One of the latter cases was well three years and the other one year at the time of report. Of the 35 cases referred to, 14 were well over two years, and 6 cases over three years. The object of the paper, the author said, was to determine, if possible, from a careful tracing of the successful cases, whether the action of the toxins upon sarcoma is to be regarded as of temporary or permanent value; in other words, whether or not it is entitled to be called curative. At the time of his report in 1898, 8 of his personal cases had remained well from three to six years; he stated that this number had now increased to 16 that had remained well from three to eight years. Of these, 2 recurred, one at the end of three and one-quarter years, and the other after eight years, both proving fatal. The diagnosis was confirmed by the microscope in all cases with two exceptions. In these instances the history of the cases with the clinical appearances made the diagnosis of sarcoma unquestionable. The type of tumor in the 16 cases that passed the three-year limit, was as follows: Spindle-celled sarcoma, 8; spindle-celled (probable), 1; round-celled sarcoma, 2; mixed-celled sarcoma, 2; epithelioma, 1; sarcoma (clinical diagnosis only), 2. It is worthy of special note that two of the successful cases now well—three and three-quarters and four and one-quarter years, respectively, were sarcoma of the parotid gland. Butlin, in his last edition of "Operative Treatment of the Parotid Gland" states that "up to the present time there are very few instances of cure by operation of undoubtedly malignant disease of the parotid." In my two cases treated by the toxins the diagnosis was not only confirmed by a competent pathologist, but further by a history of repeated recurrences after operation.

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[1] The Journal A. M. A., Aug. 27, 1898.

The results thus far, he stated, seem sufficient to warrant advising the treatment as a routine measure after all operations for primary sarcoma. While the treatment is not recommended in carcinomatous growths, it has been the experience of the writer that in many cases the toxins exert a marked inhibitory influence in carcinoma, although it is rarely curative. The only cases of carcinoma in which the toxins are likely to prove of much value, I think, are those in which they are used after primary or secondary operation, as a prophylaxis against recurrence. Up to the present time sufficient experience is lacking to justify one in making any definite statements as to how much may thus be accomplished.

The writer still believes that the action of the toxins upon malignant tumors can be explained only upon the theory that such tumors are the result of some infectious micro-organism, and this view is strongly supported by the recent expressed opinion of Czerny.

Cancroin, a toxic product obtained from cancerous tissue, has been injected by Adamkiewicz. This remedy has not cured cancer, but in some cases has secured a minimum of benefit. This brief summary of the other methods of treatment has cleared the way for the discussion of the treatment by surgical intervention, which is really the only method that offers any prospect of success.

SURGICAL INTERVENTION.

Surgical intervention is the only resource, since all drugs have proved ineffectual, and all other methods practically of no avail. It is, however, only successful when the disease is taken early in its history, and when the operation is radical in its character. Delay in operating is attended with great mortality. The more radical the operation the more certain its cure. Six months from the beginning of the disease is the utmost limit of time; statistics in my own cases prove that after the expiration of this time results are uncertain. An early, and a radical operation, therefore, are the essential requisites for cure in malignant disease.

Various methods of treatment have been indulged in from time to time; but radical surgical interference is the only method that meets with encouraging results. That surgical operation will permanently save a patient is demonstrated by a study of the cases presently to be reported.

In every instance the names of the physicians who were present at the operation are given for reference, and accompanying each case is the microscopic report of the tumor by an eminent pathologist. The exact date of operation, the situation of the tumor, the main points connected with the clinical history are reported. No case is given in which at least three years have not elapsed since the time of the operation. In many of the cases from 10 to 22 years have transpired without the slightest evidence of return. They are reported to prove the value of surgical intervention over all other methods of treatment, and at the same time to call attention to the conditions essential to success. The report should also offer hope to those who are the victims of malignant disease, since surgical interference is the only salvation for these patients.

Before discussing the subject of statistics in reference to permanent cure in malignant disease by surgical operation, I wish to say frankly, that I consider them of questionable value. They do not afford the accurate information of which the searcher after truth desires. I make this statement after much thought, deliberation and personal experience, and I am fully aware of the opposition it may invoke. My reasons are these: 1. There is no unanimity among surgeons in regard to the elimination of cases for statistical purposes; for example, one surgeon will thrown out a large number of cases on the ground that they were inoperable, which fact was ascertained in the attempt to remove the disease, and therefore they are not to be included in the final list as determining the result. 2. Another surgeon will throw out a large number for the reason that the histories are unknown, or include some cases with the clinical history of cancer without microscopic verification. 3. The types of malignant disease have such a wide variation that tumors of one class which are more rapidly malignant than those of another class are placed in the same category, and such a comparison without doubt is unfair. 4. The causes of death are ascribed in some cases to acute sepsis, while these cases died, in reality, from too prolonged anesthesia, the deferred shock of which rendered the patient less resistant to overcome any sepsis. 5. The number of cases of malignant disease, affecting one organ for example, upon which an estimate is to be based, is too limited to convey by statistics any reliable information as regards mortality or permanent cure. For example, I have had 100 per cent. of permanent cure in certain malignant disease affecting a certain organ; but I had only one case. For these, and many other reasons, I feel convinced that statistics upon this special point are unreliable; in other words, they do not furnish us with the entire truth.

With these remarks as a preface I will give in a brief way some results from my own personal experience. I would add that these statistics have been verified by a learned mathematician and scholar who did not possess a medical degree, and therefore was ignorant of any information bearing upon the subject that the figures might show. I would further add that it is possibly a case may have been reported wrongly, or a clerical error may have occurred in keeping a history of so many hundred cases. As far as I know, however, the reports are accurate.

The two questions of mortality and permanent cure may be stated in the following terms. In the cases reported prior to 1891 at the meeting of the Congress of American Physicians and Surgeons, there was no mortality in amputation of the breast for cancer or sarcoma, or for any other cause with the exception of two cases of hemophilia. There was no mortality in the operation for removal of epitheliomata or sarcomata of the skin. There was no mortality in the operation for removal of sarcoma affecting the glands, and likewise the superior maxilla. There was one death in excision of malignant disease of the intestine, and also one death following amputation of the hip-joint. In reference to the percentage of permanent cures following the operation for the removal of cancer of the breast there was 45 per cent. of permanent cures up to 1891, and in the last series of 15 cases the percentage was 83 per cent. of permanent cures of over 3 years' standing and 75 per cent. of permanent cures in cancer of the face, including epithelioma of the lip.

In regard to sarcoma there was 85 per cent. of permanent cures in sarcoma of the breast, and 92 per cent. of permanent cures in sarcoma of the glands, 100 per cent. of permanent cures in sarcoma of the superior maxilla, 92 per cent. of permanent cures in sarcoma of the long bones. There was, finally, 100 per cent. of permanent cures in simple sarcoma involving the skin.

In no instance have I used the expression permanent cure when three years have not elapsed since the operation, and in nearly every case the period has been over seven years, and in a few up to twenty-two years to the present time. I have not collected my cases since this last report, but hope to do so at some future time.

Let us now return to the more important question which is: Can any cases be reported that have been entirely cured, and, if so, how many, and of what character was the malignant disease? It seems to the writer that positive information upon this vital point is worth more than all the statistics bearing upon the percentage of curability of malignant disease. It is the absolute fact of permanent cures that interests the surgeon and the laity.

The writer reports 87 cases of malignant tumors in patients upon whom he has operated, and at least three years, and in many of the cases ten, and in some twenty-two years have elapsed without recurrence. The list includes 48 sarcomata and 39 carcinomata, making in all 87. To this list a sufficient number of cases can soon be added, which will make the list at least 100, but a few months are lacking at present to have these cases reach the full three-year limit. These cases place beyond all doubt the question as to the possibilities of a cure in malignant disease.

These cases are reported as an encouragement to surgeons in their attempts to save human life, and also as a ray of hope to the unfortunate victims of malignant disease. It is possible under certain conditions for surgery to offer to patients afflicted with this terrible scourge that destroys annually so many lives, and blights so many homes, a cure for their malady. These tumors are upon exhibition at the Pathological Exhibit, and also the microscopic slides with sections.

Each one of these cases has been carefully watched, and the work necessary to make these statistics complete has been a labor fraught with the greatest difficulty. The satisfaction of knowing that surgery can cure these malignant growths repays the writer for his years of labor in tracing these cases down for a period of a quarter of a century to the present time.

In these 87 cases of malignant tumors operated upon, and cured by the speaker, it may be of advantage to classify them in a general way, so that some idea can be formed of the success which surgical operation can expect in these diseases of such frightful mortality.

1. *Sarcoma of Superior Maxilla.*—I am unable to find any satisfactory reports upon permanent cures in sarcoma of the superior maxilla. My cases of permanent cure number 5, in which the shortest period is eight years, and the longest is eighteen years.

2. *Sarcoma of Glands.*—I am unable to find a satisfactory report of cases of permanent cure in sarcoma of the glands. My cases number 7, in which a permanent cure has taken place, the shortest period being eight years and the longest twenty-one years.

3. *Sarcoma of the Skin.*—I am unable to find any satisfactory reports upon the results of treatment in sarcoma of the skin. My cases number 22 in which a permanent cure has taken place, and in which the shortest period is eight years and the longest is sixteen years. One case is included in the list with an explanation, since, in 1891 I operated on the patient for the first time, and at present she is alive. I have operated upon her over forty times for the relief of multiple sarcomata of the skin during the past eleven years. For eleven years she has been willing to submit to operations, and at the present time is without any new outbreak; since sufficient time has not elapsed from the date of the last operation she can not strictly be as yet in the category of permanent cures. Since the past few years she is comparatively free from any return and there is every prospect of cure in her case. This case is most remarkable as one illustrating the principle that as long as the patient will allow operations they should be performed, because there is a chance of permanent cure even in these cases.

4. *Sarcoma of the Breast.*—I am unable to find any satisfactory reports of sarcoma of the breast as distinguished from carcinoma of the breast. My cases number 6 in which a permanent cure has taken place, the shortest period being seven years, and the longest twenty-two years.

5. *Sarcoma of Bones.*—I am unable to find cases of permanent cure of sarcoma of bones by any other method of treatment than by surgical intervention, with the exception of those reported by Coley. In regard to this method, mention has already been made. Butlin reports 29 cases of sarcoma of the leg with a mortality of 30 per cent. in the operation itself, and only one single case could have been said to have been completely cured, taking three years as the standard of time. This high rate of mortality, in the operation itself, is a most astonishing fact, and is only surpassed by one still more startling, which is that out of this original list of 29 cases only one single case was reported by him as having been completely cured.

My cases of sarcoma of the leg number 8 in which there was a permanent recovery, the shortest period being sixty years and the longest thirteen years.

The treatment of sarcoma of the long bones is simple, because there is but one operation, and that is amputation. From an experience derived from a number of these cases of sarcoma of bone, and from opinions formed after careful study of the cases of others, I am more and more impressed with the fact that amputation is the only operation which should be contemplated. I refer to sarcomata of the long bones. The operation of exsection or enucleation, and an application of caustics are, in my humble judgment, productive of harm; because the disease is not, as a rule, radically removed by these methods, and oftentimes the tumor returns very rapidly, and the operation seems only to add fuel to the fire.

I believe that in all cases of sarcoma of the long bones amputation should be decided upon at the earliest period possible, and the operation performed without delay. At the point of election I would suggest an amputation which would remove the entire bone affected, whether it be a subperiosteal or central sarcoma. This necessitates an amputation of the lower part of the thigh in case the tibia or fibula is the seat of the neoplasm. It necessitates an amputation of the hip-joint when the tumor is subperiosteal, and involves the shaft of the femur. In view of the great mortality of hip-joint amputation, a possible exception might be made in case of a central sarcoma of the condyle of the femur which was recognized early, and which was small in size. By amputation in the lower third of the femur in sarcoma of one of the bones of the legs, the popliteal glands are thus removed, and while this point would concern us more if the disease were cancer, yet I have seen a case of sarcoma affecting those glands.

The remedy of amputation which is suggested, is a severe one; but the disease for which the amputation is performed is a uniformly fatal one if left to nature, and in view of the great malignancy of sarcoma, I believe the operation should be the most radical one consistent with a due regard for the life of the patient during the immediate performance of the operation. It must be remembered that the patient is suffering from a uniformly fatal disease, and the chances of escape from it are in proportion, within proper limits, of course, to the distance at which the limb is removed from the seat of the malignant tumor. Finally, I trust that I have been sufficiently clear upon the following points:

1. The importance of early recognizing the disease and the necessity of complete removal of the limb, including the entire bone affected, by amputation without delay.

2. The importance of carefully watching the subsequent history of patients upon whom an operation has been performed for the removal of sarcoma.

3. The importance of a microscopic examination of every sarcoma. Surgeons are of one opinion upon this point, that a microscopic examination is a *sine qua non* to insure the tabulation of a case for purposes of study.

4. The importance of a radical operation in these cases of malignant sarcomata affecting the long bones of the extremities, and the condemnation of partial enucleations and the use of caustics and plasters.

5. The importance of encouragement to patients suffering from malignant disease of the long bones, on the ground that early and radical operations, even in the most malignant cases, may result in perfect cure.

6. *Carcinoma of the Skin.*—I am unable to find any satisfactory reports of permanent cures in carcinoma of the skin. My cases number 19 in which there was a permanent cure, the shortest time being five years, and the longest twenty-one years. In this group is included a case of carcinoma of the ileum and cecum with resection of six inches of the bowel and a subsequent anastomosis with a Murphy button. It is now nearly four years since the operation and the patient is well and at work.

7. *Carcinoma of the Breast.*—My cases number 20 in which a permanent cure has taken place; the shortest period is four years and the longest thirteen years. Each one of these 20 cases is alive to-day and with no return, or recurrences, or metastases.

The result of the treatment by surgical interference shows, therefore, that these 20 cases have been permanently cured, and no other method or plan of treatment can furnish 20 cases that have been subjected to the test of so many years of immunity.

If now the 6 cases of sarcoma of the breast, of which mention has been made, be added to the 20 cases of cancer of the breast, there are 26 cases of malignant disease of the breast cured by surgical operation, the shortest period being four years and the longest twenty-two years.

CARCINOMA OF THE CECUM.

WITH REPORT OF CASES IN WHICH THE CECUM WAS REMOVED FOR MALIGNANT DISEASE.*

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Ileocecal carcinoma is not an infrequent malady. Ewald in a collection of 1148 cases of intestinal cancer found 64 in the cecum and 26 in the ileum, and more than half of the latter involved the ileocecal valves. Sutton says that of 100 cases of intestinal carcinoma 75 will involve the rectum, 23 the large intestine and but 2 the small bowel. Frank's table shows that two-thirds of all cancers of the large bowel involve the cecum and sigmoid flexure, and in about equal proportion. From these statistics it can be estimated that 7 per cent. of all malignant diseases of the bowel involve the cecum. Sex does not seem to have much significance. The average age of cases of carcinoma of this organ is somewhat younger than malignant disease in other parts of the body, and while not frequently found in the young it is sufficiently common to warn us against laying too much stress on the years of the patient.

Among the most frequent of the attributed causes is constipation, but if this is an important etiologic factor it would seem that the disease would affect females more often than males; yet this is not the fact. Maylard states that primary carcinoma of the intestine is always of the columnar-cell variety and Furnival points out the frequency of colloidal changes, particularly in the young. Lymphatic infection is found in less than one-half of the cases dying from intestinal carcinoma. Haussman, in 112 collected autopsies, found that 55 were limited to the gut, the remainder showing lymphatic involvement in 36 cases and in 21 cases general infection. More than one growth is seldom discovered, although two or more points of disease have been reported; whether all were primary or from a single source of infection and carried to the situations found by implantation or arterial emboli it is impossible to state.

The disease most frequently originates at the ileocecal juncture and has the usual tendency of all carcinomata of the large bowel to form a ring-like constriction, although a considerable tumor may exist without obstruction. The duration may be very prolonged and its course before active obstruction supervenes is usually slow. Briddon reports a case of twelve years' probable existence. Death usually results from obstruction or perforation, the latter either just above the stricture and close to it, or at some point in the cecum from distension; perforation is somewhat more frequent (7 to 4).

The distension ulcer in the cecum is similar in pathology to the distension ulcers in the small intestine about which Kocker has written so interestingly. The symptoms of malignant disease of the cecum are colicky pains, constipation alternating with diarrhea and progressive wasting. A tumor may be felt in some cases.

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In the later stage intestinal peristalsis can be plainly seen through the attenuated abdominal walls and is usually accompanied by marked gurgling. Other cases present symptoms of chronic appendicitis with an induration indicating a small inflammatory deposit about the appendix. This was true of two of our cases. As the obstructed material is largely accumulated in the small bowel, symptoms of gastro-intestinal irritation are more marked than if the large bowel only was involved. A few cases are ushered in without premonitory symptoms by an attack of acute obstruction. König, Korte, Barton and others report cases in which an acute intussusception was the first sign of trouble.

The differential diagnosis between malignant stricture of the cecum and simple or tuberculous strictures may be impossible without exploration. In a paper on "Localized Tuberculosis of the Intestine" read before the Minnesota Academy of Medicine, Feb. 1, 1899, I reported three cases of tuberculosis of the cecum, and I have met with one additional case since that time. In these cases the foul discharges from the bowels, slight but constant temperature, tendency of the tuberculous mass to soften, taken into consideration with the previous history made a diagnosis possible, although the obstructive phenomena were essentially the same.

Cases of chronic inflammatory thickening of the cecum have been reported giving much the same signs and are in some cases, at least, syphilitic in origin. Impactation of feces in the cecum is not so very infrequent and may remain months, if not years, without dislodgement. In one case which I examined in an inmate of the Rochester State Hospital for the Insane, some twelve years ago, such an impactation was known to have been present for several years and finally by atrophy necrosis ulcerated to the surface of the body. Dermoid or other tumors of the abdominal muscles on the right side may confuse the diagnosis. In the one case of dermoid which I have seen the differentiation was most difficult. Dermoids are very rare and usually occur in the female following a labor. There is no history of intestinal obstruction.

Acute obstruction of the bowels is a frequent complication of the malignant process and its relief a prerequisite to a successful outcome. Treves, speaking of intestinal obstruction generally, says that he reduced his mortality 50 per cent. by relieving the distended intestine above the obstruction. This has been done by a simple incision or aspiration (Grieg Smith) or the use of Paul's tubes. The common method of relief has been that of forming a temporary artificial anus and in the large intestine necessarily in this manner. In such cases three operations are demanded: 1, relief of the obstruction by the artificial anus; 2, resection of the diseased area, and 3, closure of the anus, and this last has a mortality of its own. Makin collected 39 intestinal resections for the closure of an artificial anus —21 were cured, 3 uncured and 15 died.

From an operative standpoint the ileocecal coil should be independently considered. In cancerous or other obstruction of either the large or small bowel the normal condition above and below the disease is identical, but in this situation the small bowel empties its contents in a fluid state into the large intestine, in which the feces assume solid form. The question is not one of ordinary intestinal union in which two parts of similar bowel are joined, but one in which by reason of the dissimilarity an anastomosis can be effected under very favorable circumstances.

In ileocecal obstruction, the ileum can be readily joined laterally with the transverse colon. The obstructed intestinal contents are fluid and do not endanger the union as is the case with the solid accumulations in the large bowel, and the size of the receiving intestine and its nearness to the anal orifice gives it all of the advantages of an artificial anus on the surface of the body. The union can be effected at a point sufficiently high on the ileum to secure healthy bowel for approximation. There is also the great advantage in that the communication is permanent. The extirpation when performed later is more easily effected, both ends of the intestine being turned in and closed. We have performed ileocolostomy for various causes six times, in this manner, using the Murphy button, and all recovered from the operation. In four of these cases nothing was attempted in a radical way on the diseased part, the discharges draining satisfactorily from either side of the obstruction. Exclusion of a portion of the intestine can be safely accomplished provided there is some exit for the secretions of the excluded part, but, as shown by the studies of Kammerer, if the exclusion is absolute future trouble can be expected.

Resection of the cecum was first performed by Billroth in 1876, and the operation has now been done many times and a large number of cases have been reported. The operative mortality as given by Grieg Smith was between 30 and 40 per cent. Furnival estimates the mortality of the more recent cases as somewhat less, 20 to 25 per cent., perhaps. Butlin, in 95 reported cases involving the cecum and ascending colon, gives an operative mortality of 29 from shock and sepsis, and 66 recoveries.

Excision of the cecum for malignant disease usually requires removal of the ileocecal juncture and if the disease be not too advanced can be readily effected. The arteries are almost all terminal with but few anastomotic loops (Witherspoon) and the ligation of the blood supply does not endanger contiguous portions of the bowel. A lateral incision is most convenient. The peritoneum along the outer wall of the cecum and ascending colon is divided, the malignant portion of the bowel raised and the vessels ligated. The ascending colon is cut across, one and one-half to two inches above the upper limits of the disease, and its distal end turned in by a purse-string suture. The proximal portion, clamped to prevent leakage, is lifted out of the abdomen and when completely separated from its other attachments, the ileum is divided at a healthy point. The anastomosis is best effected, end of the ileum to the side of the ascending colon. If the ileum can not be readily brought to this portion of the colon, it can be attached to the transverse colon either end to side or side to side.

The ultimate results of excision done early are good. Van Bramann in 14 cases had 4 free of recurrence after three years, Macewen two out of five, Wolfler two out of twelve, Czerny three out of eighteen cases. When it is considered that a number of the remaining cases were free from recurrence although less than three years, it is certain that later reports would increase the percentage of permanent cures. We have excised the cecum four times, twice for malignant disease, once for tuberculosis and once for chronic intussusception, all of the patients recovering from the operation. In the past two years we have met with five cases of cancer of the cecum. In two, extirpation of the ileocecal coil resulted in recovery, in two the extent of the disease prevented a radical operation and ileocolostomy was performed for relief and in one advanced case without obstructive symptoms, the exploratory incision was closed. A brief report of the two cases in which a radical operation was performed is appended.

Case 1.—Carcinoma of the Cecum Involving the Ileocecal Juncture. Extirpation. Recovery.

J. E. R., Yankton, S. D., American, 38 years of age. Admitted to St. Mary's Hospital, Rochester, Minn., April 4, 1899. History of colicky pains in the abdomen for four years. While not severe, the pain has been persistent; during the past year it has become located in the right side. For four months a diarrhea has been persistent and he has lost 40 pounds in weight. Family history negative.

Physical Examination.—A moderately emaciated man of cachectic appearance. No evidences of disease of organs outside of the abdomen. Temperature and pulse normal. There is considerable intestinal distension and intestinal peristalsis waves can be seen and are accompanied by marked gurgling. On deep pressure in the right side an induration can be detected, evidently connected with the cecum. It is about the size of a small lemon, firm to the touch and not very sensitive. Upon the history and physical signs the diagnosis of appendicitis seems warranted and it is thought to be tubercular in origin and the obstruction due to adhesions.

On April 6 a lateral incision revealed a nodular tumor of the cecum involving the appendix and ileocecal juncture. A few enlarged glands could be felt behind the bowel. An incision through the peritoneum was made on the outer side and the cecum with the enlarged glands was lifted out of the abdomen. The vessels supplying the part were ligated with catgut. The ascending colon was divided two and one-half inches from the tumor and its distal end closed with a circular suture. The proximal end was clamped. The mesentery was progressively ligated and the ileum divided eight inches above the ileocecal valve. An attempt was made to join the end of the ileum to the side of the ascending colon but there was some tension, the divided end was therefore turned in with a circular suture. The omentum was raised and the side of the ileum six inches above its severed extremity was anastomosed to the transverse colon near the hepatic flexure with a Murphy button. A small drain was introduced into the right side and the incision closed. Recovery was uneventful. The patient was discharged May 3, 1899. He rapidly regained his usual weight and strength and is now pursuing his work in better health than for years before. Microscopic examination showed only inflammatory changes.

Case 2.—Carcinoma of the Cecum, Involving the Ileocecal Juncture. Extirpation. Recovery.

A. C. S., Maiden Rock, Wis., Scandinavian, 30 years of age. By occupation a fisherman on the Mississippi river. Admitted to St. Mary's Hospital, Jan. 6, 1901, with the following history:

For the past six months has suffered from cramps in the abdomen with a feeling of weakness. For the last three months the pain has been nearly constant in the right side, losing weight and strength, constipated. Family history good.

Physical Examination.—A man of good physique, somewhat emaciated, walks with the right thigh drawn up to relax the psoas and iliacus muscles. Temperature and pulse normal. No evidences of disease outside the abdomen. There is some tympanites. On deep pressure in the right side a small mass can be detected which is tender to the touch. A diagnosis of chronic appendicitis was made.

January 8, an intermuscular incision (McBurney) was made and a tumor involving the cecum, appendix and lower ileum was exposed. The incision was lengthened, cross cutting the deeper muscles. The peritoneum was divided outside and the cecum, appendix, ascending colon and fourteen inches of the ileum was excised, a lateral anastomosis between the lower ileum and transverse colon being effected. There was extensive adhesion posteriorly in the mesentery necessitating the extensive resection. A few small glands were found. A small drain was introduced and the incision closed. Patient discharged February 27 in good condition. The microscopic examination of the glands removed showed only inflammatory changes.

In conclusion, I would urge that every operating surgeon be prepared to excise the cecum. The early symptom may be such as to lead to the belief that an appendicitis exists and in this way a timely operation for a malignant process may result in a complete cure.

DISCUSSION IN SYMPOSIUM ON THE SURGICAL ASPECT OF CARCINOMA.*

Dr. A. C. Bernays, St. Louis—From what has been shown here we are to face an endemic of cancer. The exact figures, as Dr. Dennis read them, I do not remember, but there is undoubtedly now an endemic of cancer which we have recognized, because it has increased largely in recent years. This endemic seems to affect all classes. The question is: Will it be possible by united, collective effort to bring help, as we have done in other diseases, which we have attacked collectively in our professional efforts? Dare we hope for a curative remedy? I think not. Let us be modest. We dare to believe that by collective investigation, such as we have made in other pathologic conditions, we may gain accurate knowledge regarding the location, frequency and geographical distribution of cancer, also its mortality and length of life of patients afflicted. Upon that basis we dare hope that we may be able to exercise a sort of prophylaxis, as we now do in tuberculosis; we may confidently expect this much. But even this result will depend largely upon the success of our efforts in discovering the nature of cancer. Many men have worked upon this question. All have failed to solve the problem. I believe that only a few cases will furnish material which will be useful in our research for the parasite. I believe that not all cases of what we call cancer now—and I wish to emphasize that point here—are due to parasitic infection; some cases are undoubtedly degenerative processes, necrobiotic processes of tumors or growths developed on the basis of rudimentary tissues which we have inherited from an infinitely long line of ancestral forms of life. What we call cancer, or what we call malignant disease, consists of many different things, and the investigations, which I think will be pressed and enthusiastically continued, will show that under the head of "cancer" some quite different things are included; some undoubtedly of parasitic nature and others of embryonal or rudimentary and developmental nature. If the discoveries and conclusions of the New York investigators, under the direction of Dr. Park, are based on careful observations, they will soon be corroborated by the researches in laboratories all over the planet.

A few words on resection of the cecum. About two months ago I had an opportunity to resect a cecum in a case of cancer. I will relate it as briefly as I can, and then make a sketch of the operation. The patient was a man aged 54, who had been sent to me for operation by a good physician, with the diagnosis of chronic appendicitis. I felt a hard nodule in the right iliac fossa, but was unable positively to make a diagnosis of chronic appendicitis; nor was I able to come to the positive conclusion that there was a cancer of the caput coli, or ileo-cecal valve, as it proved to be. Deciding to operate, I opened the abdomen and found a large lump, consisting of glands; the meso-colon and the mesentery were normal. There were only a few small glands. I used the Kocher clamp and clamped off the gut and the ileum by clamping at right angles. By closing it tightly I was enabled to cut away this whole mass, and, putting my hand under it, to lift it up from the iliac "shovel." This was accomplished with scarcely any bleeding, perhaps a little from the surface from which I lifted up the mass. There was only one large artery coming down, which was tied. The ileum fortunately had a long mesentery and it was freely movable and the colon also could be turned well out of the wound. I intended to close up this hole by simply inverting the whole thickness of the bowel and closing it with a few catgut sutures, but, at that moment, it struck me that the better plan would be the Maunsell operation, inasmuch as I had here a large hole in the cecum. So I introduced a pair of forceps, bringing this piece of gut up; at this point I made an incision in the cecum, and by means of a pair of forceps brought this piece of gut together with the cecum. I was then enabled, in the very simplest manner, to sew together, just as Dr. Weir did in the resection of the rectum; I sewed the gut into the cecum by through-and-through sutures, then simply drew it out, and then put on some Lembert sutures on the outside all around, and finally closed this opening here with Lembert stitches. That finished the operation. I think you will have to admit that that method is simpler than any other method, and restores almost to the normal condition after the resection of the cecum.

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* Papers by Drs. Park and Powers published Sept. 14, 1901; Drs. Weir and Senn, Sept. 28, 1901.

Dr. G. W. Crile, Cleveland—I wish to briefly describe a method of controlling hemorrhage in operations for malignant disease of the tongue. A small screw clamp with parallel blades, protected by small pieces of rubber tubing, may be placed upon the common carotid arteries and so adjusted by the screw as to close the lumen of the vessel, thus rendering the field bloodless.

Dr. W. L. Rodman, Philadelphia—I think we are all beginning to feel that there is an accumulating amount of evidence that carcinoma is due to parasitic disease. Certain things indicate that it is due to a parasite. The very fact of its encroachment would indicate that it could not be anything but a germ. We know that carcinoma, until recently, was not a disease frequently found among the Indians and negroes, and yet, at the present time, it is practically found in both races; carcinoma of the breast in the negro is probably more common than in the white. This change must be due to a germ, and, once having started, it is likely to continue and increase. Dr. Dennis raised a very important question when he said that he had not seen a case of sarcoma of the jaw recover. In a discussion not long since, in the Philadelphia County Society, rather the opposite position was taken with regard to sarcoma of the jaw. It was held that an operation that is radical and done early is more likely to prove successful than sarcoma in any other part of the body; a very good reason was given for it at that time, viz., the fact that the mouth is a septic cavity and that suppuration results after an operation. This explains why more cures are reported on the upper and lower jaws than sarcoma in other parts of the body. I know of a case of sarcoma of the lower jaw fourteen years after operation and the upper jaw two years after operation. I fully agree with the position taken by Dr. Powers that we should cut into a tumor for diagnostic purposes; it is not only justifiable, but the best course that one can take. The little risk incurred in doing this is more than justified by the fact that it is hardly fair needlessly to remove the mammary gland of a child-bearing woman.

Dr. Gustav Fütterer, Chicago—While I do not intend to discourage research in that direction, I wish to state that I have never been able to believe that parasites are or may be the cause of carcinoma. Probably the strongest reason against a parasitic cause lies in the fact that in carcinomatous metastasis the cells of the organ invaded do not become infected, and do not participate in the building up of the metastasis, which develops from the invading cells. I have first advanced this reason at a meeting of the Chicago Pathological Society, Dec. 14, 1896, and I still consider this fact of the highest importance; it is hard to conceive that such would be the case if the invading cells included parasites.

I have always adhered to Virchow's theory of irritation, and after all that I have seen, I take a firmer stand on this than ever. Friction causes no real inherent malignancy of the epithelial cells, but only an apparent malignancy. It is none other than can be explained by a greater supply of blood that is not regulated with even nearly the almost mathematical correctness which governs the nutrition of the epithelial apparatus under normal conditions. So while I do not believe in an inherent malignancy of carcinoma cells, I do believe that normal epithelial cells, through continued circulatory disturbances, become trained to indure and prosper by a condition of hypernutrition. Hand in hand with sprouting blood vessels surrounding them, the epithelial cells may invade the deeper tissues, the resistance of which has either been lessened by chronic circulatory disturbances, particularly edema, or by a reduction of the volume of blood in old age. Then they may proliferate in the deeper tissues making metastasis and causing cachexia. It may be cachexia of a different kind, as the cells retain their physiologic function more or less, according to local conditions, overloading the circulation with physiologic products. This alone will explain the different forms of cachexia, such as we find them, for instance, with carcinoma of the stomach, primary carcinoma of the liver, etc.

Dr. G. B. Massey, Philadelphia—The last remark made by the speaker seems to me to be capable of being answered by objections against the autocytic theory, which would be evident to the biologist. For to adopt the autocytic theory of cancer we must assume that cells can change their character. We must assume that cells that have been generated as tissue cells, with a benign course or history, can suddenly, for some unknown reason, entirely change their character. No one can watch these growths for any length of time without feeling sure that there is a separate entity in that growth from the entity in the host, that there is an entity there, a separate entity, totally distinct from the man or woman on which it feeds. I wish simply to make the point that the very evident parasitic nature of cancer should attract more attention from the profession to an antiparasitic method which was brought to the attention of the Section on Practice of Medicine of this Association, at its meeting in 1897, by myself. That is a method by which the electric current is used to cause a chemical disintegration of a growth at once under ether, together with the production of a surrounding zone of sterilization; it produces a zone from an inch and a half to two inches in extent beyond where all tissues are destroyed and beyond where the demarcation commences. In this zone the physician may feel assured that a large proportion, if not all of the germs—by improved technic—may be killed without destruction of the normal tissue cells. This method has been tried in my hands in 42 cases, and I maintain that it is time for one or two other men also to try it. These 42 cases were brought mostly by physicians, most of them having been previously operated on by the knife, 23 of them died of metastases in spite of what I did, the metastases originating prior to the application. Nevertheless, 15 out of the 42 cases are living, and the great bulk of the 15 cures are of more than two years' standing; in several 7 years have elapsed since the application, and in others 5 years, without recurrence.

Dr. R. H. M. Dawbarn, New York—I desire to express my cordial approval of Dr. Bloodgood's advice in favor of the most radical insistence upon extirpation of all tumors, all lumps in the breast of whatever kind. In a great many instances our patients will veto the suggestion, but that does not prevent our duty of proper advice in the case. I have been making a special study of malignant work, especially about the mouth, the regions supplied with blood by the external carotid, and next autumn I shall publish a list of about forty personal operations of that nature. Regarding the operation for cancer of the tongue: 1. The chief cause of death is shock. One chief cause of shock, as we all know, is hemorrhage. There is nothing I am more certain of—differing from Dr. Christian Fenger in this regard—than the wisdom of ligating the external carotid in every case, prior to a complete extirpation of one-half or of the whole tongue. This ligation can be done in five minutes; and, thanks to the early work of Dr. Wyeth, we now know that it is done with great safety; it makes the work done subsequently practically bloodless. We do not, then, need to do a preliminary tracheotomy. 2. If the patient does not die then, but later, what will the cause be generally? It will be sepsis, particularly that of a pneumonic nature, and due to entry of septic discharges from the mouth into the air passages. Apropos of that, I think it is wise to rub the raw surfaces in the mouth with aristol at once. If we adopt that plan, we will have surfaces that will not offensively slough. I do not pack the floor of the mouth with gauze; instead of packing, I use very frequent irrigation with a fountain syringe. We all know that a considerable percentage of cases of tongue excision die of sepsis. I have lost several myself in my early work from septic pneumonia; these I feel sure that I could now save. The chief cause of death was the position of the patient *post operationem*. In the "International Text-Book of Surgery," in an article on this subject, there is a bit of advice which seems really dangerous; it is that as early as possible patients from whom the tongue has been excised shall be allowed to sit up. On the contrary, I know that they should always be put with the head lower than the foot of the bed, and kept there so long as there is a sloughing condition of the mouth, lest the foul saliva gravitating down the air-passages cause a "schluct-pneumonie." When there is a healthy, odorless, granulation surface, and when control of the stump of the tongue in the act of swallowing is regained, so that coughing does not show that food or drink is passing "the wrong way," then, and not before, it is wise to let the patient's head be elevated—even though this require weeks or longer. In conclusion, let me allude to a point heretofore neglected by operators, but as I believe unwisely. When just a little of the base of the tongue can safely be left attached to the hyoid bone, it is most important that this stump gain power to resume its function of closing down the epiglottis over the larynx in the act of deglutition. I do not know of any text-book that advises what I have practiced, namely, to save the long stump of the healthy twelfth (hypoglossal) nerve, making a little slit in the remainder of the intrinsic muscle of the tongue and sewing with fine catgut into this cut the end of the twelfth nerve—so that this motor nerve may, in time, control the muscle. I have felt encouraged to continue this point in the technic of the operation.

Dr. A. H. Levings, Milwaukee—I desire to call attention to one of the conclusions made in the classic paper by Dr. Senn, namely, regarding the development of carcinoma from epithelial cells. It was stated that all carcinomatous growths were the result of an atypical proliferation of epithelial cells from a matrix of embryonic cells, of congenital or post-natal origin. In the discussion, I desire to call attention very briefly to the histology and embryology of the enamel organ of the teeth. The enamel of the tooth is epiblastic in origin and comes from the epithelial structures lining the mucous membrane of the mouth. If we consider the embryology we find that at about the end of the second month of fetal life a proliferation of the epithelial cells in the form of a half circle and situated directly over the maxillary bones takes place. This growth of epithelial cells dips down as a solid wall into the deeper tissues beneath, or into the mesoblast. From this wall numerous pillars are given off, one for each of the deciduous and permanent teeth. The ends of these pillars become bulbous, forming the enamel of the teeth and enclosing the papillæ. During the fourth or fifth month of fetal life the tooth follicle, made up of connective tissue, encloses the enamel, cutting it off from the above-mentioned pillar. We have then within the mesoblast not only a solid wall of epithelial, embryonal cells skirting the entire area of the jaw, but also some twenty-six columns of cells given off from this wall and projecting into the still deeper tissue. This entire mass of embryonal cells has no further function and is either in part absorbed, or remains dormant and sequestered within the tissue as functionless cell nests. There is no other portion of the body in which there are anything like the same number of dormant, useless, embryonal cells sequestered within the tissues, as occurs within the jaws. It is a well-known fact that epithelial tumors, either cystic or solid, taking origin from these sequestered cells are among the rarest of pathologic curiosities. Up to the present time probably less than a half dozen, and as far as I am aware, but four have been reported. It would be a curious fact were the Remak-Cohnheim theory of the production of tumors correct in all cases, that here in the jaws where these embryonal, sequestered cells are so abundant that epithelial tumors are so infrequent. In so far as my investigation extends I am unable to satisfy myself that the Remak-Cohnheim theory of the causation of tumors is applicable to more than a small proportion of the whole.

Dr. K. A. J. Mackenzie, Portland, Oregon—The weight of evidence from the standpoint of the investigator is strongly in favor of the parasitic theory and this evidence is very strongly enforced by the clinical facts. The concurrent testimony of other investigators in foreign countries who have followed up this line of research is very significant, and the recent work of Leopold, Plimmer, and others affords apparent corroboration of the present work of Park and Gaylord. In considering the clinical evidence one is impressed with the frequency with which the disease develops in regions where there are departures from the normal, anatomic, and physiologic standards. Witness the frequency, for instance, with which the disease develops in such exposed points as the lip, tongue, breast, penis, angle of the eye, skin, chronic ulcers and cicatrices, etc., these facts being very strongly suggestive of an infection introduced from without and not acting from within the body. Within the body we find a strong analogy when we consider that the disease develops at points where the local conditions favor first irritation and subsequently infection. The pylorus, the stomach, the hepatic and splenic flexures, the rectum, the gall tracts, the pancreas, the bladder, etc., all bearing testimony to the topical tendencies of this disease and to an infective process. So apparent is the fact that the inference is just, that the development of carcinoma always predicates, 1, a departure from the anatomic or physiologic standards of the parts and 2, an infection. By parity of reasoning the hope of successful treatment must largely rest in prevention, in the early recognition of all disordered physiologic and anatomic states and their timely correction.

Dr. C. A. Powers, Denver—Dr. Bloodgood spoke of the relative frequency of breast tumors at the Johns Hopkins Hospital, giving, as I remember, a proportion of 426 cases out of 12,000 admissions, or over 3 per cent. of all admissions to the hospital. Possibly such a high ratio may be explained by the fact that the work done there on the breast has attracted to that clinic an unusually large number of breast cases. I think 3 per cent. would be much too high for us to expect as an average. Dr. Weir's operation for cancer of the rectum seems to be an admirable one; thorough, permitting an excellent inspection of the parts, with good control of hemorrhage, and offering a better chance of cure than the Kraske operation. Kraske himself says that most cases of carcinoma of the rectum have a high seat. I fail to understand from Dr. Weir whether the upper fragment comes down easily. In the Kraske operation we find a great deal of difficulty in bringing down the distal end of the upper fragment. It has been my fortune to do five Kraskes, and I look upon it, as we all must, as a dangerous operation. I think it one of the severe operations in surgery; certainly in the hands of the best operators it has a mortality of not less than 20 or 25 per cent.

Dr. W. J. Mayo, Rochester, Minn., in closing—My object in preparing this paper was not to present anything new. The frequency with which operations for appendicitis are now being done, and the evidences that would induce us to operate on cases of appendicitis will lead to many early operations for carcinoma of the cecum, and we should be prepared for that. The two cases in which I succeeded—I believe in securing ultimately successful results—were both induced by a diagnosis of appendicitis. All who operate with that diagnosis ought to prepare themselves for excision of the cecum.

The Blind as Masseurs.—E. Eggebrecht of Leipsic has trained four blind women and nine blind men in the science of massage, and describes his methods and the technique in the *Ztft. f. Diät. u. Phys. Therapie*, V, 2. He believes that it is the duty of physicians to encourage this employment for the blind, not on account of pity for their misfortune, but because they are so exceptionally endowed for it by the development of their sense of touch. A writer in the *Wiener Klin. Woch.* states that the majority of physicians in Austria entirely disapprove of massage by the laity, and consider it incumbent on them to refer patients for massage to young colleagues just entering practice and waiting for clients.

ON THE GROWTH OF EPITHELIUM.*

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In the following I intend to report upon some experiments which were undertaken as a continuation of former work published in 1898, in the *Archiv f. Entwickelungsmechanik.* There are reported observations on the growth of epithelium in the coagulated blood during the healing of wounds. I found that epithelium may branch in the blood. I further gave pictures of epithelium surrounding connective tissue structures and even small particles of cartilage. As observed before, mitoses were found in the deepest rows of the epithelium, but besides these I found pictures which could only be explained as amitoses. These were usually situated in the upper rows of the epithelium. The furrows in the nuclei went so far that an entire separation of the different parts of the nuclei could be observed. Without going into the former literature, which was given in my former publication, there appeared since 1898 three papers on this subject, namely, the papers of Kromayer, Branca and Von Bardeleben.

My further investigations were undertaken: 1. To determine the situation of the blood in the growing epithelium. 2. To exclude the possibility that the blood only secondarily raised the epithelium and separated its different parts. 3. To find a means to bring about such separation of the growing epithelium from the underlying connective tissue in an experimental way, so that we might not need to rely upon accidental observations. An occasional observation was made once before by Garré, who saw that in a transplanted piece of skin a few cells were pushed down into the blood, but he did not observe any extended growth of branching epithelium into the blood. 4. To find out in a general way how frequently it was possible to separate growing epithelium from other growing tissues.

My results are the following: If epithelium penetrates into the blood it surrounds small particles of blood and includes it. We then find single blood corpuscles either included inside the epithelial cell, at the side of the neucleus, or we find them between the epithelial cells in small cavities, surrounded by a distinct membrane. Near such places we may occasionally find mitoses of epithelial cells and pictures which speak in favor of amitotic division.

We also find a larger collection of red blood corpuscles inside the epithelium. Blood corpuscles inside the epithelium did not cause the epithelial cells to become pigmented.

To bring about, if possible, a separation of the growing epithelium from the growing connective tissues, I used the following procedure: A small flap of skin was raised in the ear of the animal; at the point of insertion of the flap a second flap with the cartilage and the deeper structures were cut out with a razor and a piece of agar introduced under the cartilage. Then the skin was placed directly over the agar and the cartilage above the whole was fixed with collodium. Under these conditions a variable quantity of leucocytes is found in the agar and the surrounding tissues. The effect of softening the agar and surrounding tissues by the leucocytes makes it easy for the growing epithelium to penetrate agar and tissues.

We thus find frequently the epithelium growing directly into the agar. Not only the deepest layers of the epithelium invade the agar, but also the upper rows of the regenerating cells may grow upwards into it. New branches are frequently given off. Even single rows of cells may branch into different directions. The epithelial cells under these conditions frequently become spindle shaped.

At other places we find particles of agar surrounded by growing epithelium. Sometimes there are very few leucocytes near or inside the agar; sometimes there are a larger number present. We frequently can observe that the epithelium is not accompanied during its growth into agar by a continuous layer of growing connective tissue. One may perhaps occasionally see besides leucocytes a few cells which might be of connective tissue origin, but at other places we see the epithelium distinctly not accompanied by connective tissue. We may find mitoses in cells directly resting on agar, or inside of a mass of epithelial cells, surrounded by agar; epithelium growing into agar did not usually produce any keratohyalin, nor was there a regular formation of the horny layer. I found that with a few exceptions the epithelium began to undergo these normal changes (the formation of typical keratohyalin and of a horny layer) only after it was again in connection with well-developed connective tissue. The newformed keratin separated the agar and epithelial cells in it from the underlying tissue and the agar was thrown off after a short time. The epithelial nuclei could for some time still be seen as dark rods, situated in filaments which were the remains of the epithelial cells. Occasionally we found in epithelium situated in the agar the beginning of the formation of an epithelial pearl. Under such abnormal conditions I also saw in epithelium which had grown between agar for a longer period and which, therefore, was accompanied by connective tissue, a body very much resembling the cell inclusions seen in carcinomatous cells and by some believed to be parasites.

I found pictures of epithelium beginning to grow into the muscle tissue. The cells which are very much elongated surround the muscle fibers. The conditions necessary for that are probably the same as given above in regard to agar, namely, that there has been previously a dissolving action by leucocytes, although these latter may afterwards absolutely disappear and the epithelial cells alone may then surround the muscle fibers or the parts of cartilage. It is impossible at present to state how much the epithelial cells are aiding this process started by the leucocytes. It is also impossible at present to give with certainty an analysis of the different factors which might come into play during the growth of epithelium, which make the epithelium branch in different directions in the blood or in the agar.

Another and perhaps more satisfactory method for extending experimental studies on different tissues, which may give us the means to investigate their growth under variable external conditions, is the following: A piece of the tissue, in this case of epithelium of the skin, is entirely cut off with a razor and pushed into coagulated blood serum as it is used for bacteriological purposes. The blood serum with the included epithelium is transferred afterwards into a living animal.* After 7 or 10 days we may find that at many places the epithelium has grown inside the blood serum; rows of cells grew into different directions, epithelial cells surround particles of the blood serum, cells branched off and extended further into the culture medium. Frequently individual epithelial cells included some of the blood serum in vacuoles situated near the nucleus. The periphery of such cells showed repeatedly a distinct radiating striation. Occasionally such cells became even detached from the main mass of cells, they assumed a round shape, but showed even then the characteristic striation and included the blood serum near their nucleus.

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* Read at the Fifty-second Annual Meeting of the American Medical Association in the Section on Pathology and Bacteriology, and approved for publication by the Executive Committee: Drs. A. Stengel, W. S. Hall and L. Hektoen.

* Certain necessary precautions will be described in another paper.

There were almost no leucocytes visible at this period and over considerable areas the epithelium was not accompanied by connective tissue. Nevertheless, several mitoses could be seen in the epithelium and always in cells directly in contact or near the blood serum, just as in the ordinary epithelium the mitoses are found near the connective tissue.

The cells and nuclei were usually drawn out as if traction had taken place on the protoplasm of many cells. The cells were not massed together as it would have been expected in case the mitotic division and the pressure resulting from the increased number of cells were the only cause of the ingrowth of the epithelium. It is therefore probable that there are other protoplasmic movements at play besides that connected with the mitotic division of the cells.

In conclusion, it might be stated that during its growth the epithelium forms a mass of cells, all layers of which are equally able to grow in different directions. A distinct differentiation between different rows of these cell masses does not exist. Later on the epithelium which comes into contact with connective tissue well supplied with blood vessels forms again regular epithelium, the lowest rows producing new cells, which now undergo the changes leading to the formation of normal keratohyalin and keratin. We see that these growing cell masses do not need connections with either resting or growing connective tissue; although under the usual conditions found during the growth of epithelium, the epithelial cells are found accompanied by connective tissue. The possibility of separating the growing epithelium from other tissues might be used to subject an isolated tissue like epithelium to certain experimental conditions, as for instance, to the influence of different chemical substances and thus study the reaction of isolated tissues, other than connective tissue and leucocytes to different stimuli.

SOME CONSIDERATIONS REGARDING THE HYGIENE OF EARLY SCHOOL LIFE.*

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The medical man's point of view regarding the hygiene and physical regimen of school life often gives rise to misunderstanding and not infrequently to the most unreasonable opposition from the pedagogue. The physician, says the pedagogue, is too materialistic, is too much occupied with the pathologic side of the child and not infrequently is biased, catering to the hysteric dilettante for the mere sake of humoring the misguided parents.

Under the head of "Mental Fatigue in School"[1] appears, among other propositions of a similar character, the following translation, from a paper by Prof. Albert Spitzner, Leipzig:

"The propositions generally advanced, that present methods of public education imperil the health of children, is not only applied to certain evils for which individual teachers or schools are called to account, but directly attack the normal foundation of a school. The censure of physicians does not refer to the harming of already sick or nervously inclined pupils, but to injury done to mentally and physically normal children, by methods and practices considered normal." Dr. Pellmann, tersely expressing himself, says, "Children work too soon, too much and badly; that is to say, under unfavorable hygienic conditions." In interpreting his meaning we are reminded of the long list of studies, the rushing through of courses, the long duration of hourly, daily, and weekly lessons of useless studies, the method of teaching, unscientific in its disregard of the laws of physiology and purely in favor of psychology, the evil of home tasks which rob children of their short periods of recreation, etc. We receive also the practical suggestion of omitting home lessons, instructing by means of observation lessons, instituting a beneficial interchange of physical and mental occupation, etc.

Further on the paper continues: "It may be truthfully said that the judgment of the medical profession on these matters is not based on an actual, exact, and technical examination of the methods employed, but on inference from facts connected with nervous diseases of children." Psychologic pedagogy must protest against such arguments.

Again, this same report says: "In view of what has been said, the doctrinary foundation upon which the medical profession bases its opinion of psychic and in part physiologic conditions and processes, can not be accepted by teachers who must protect their profession against medicine and its encroachments; that is to say, must place psychologic pathology and pedagogic hygiene and therapeutics in so clear a light that the facts connected with the intellect and the development of children be studied in a manner consistent with their real meaning and pedagogical observation."

This represents briefly the case of the routine pedagogue versus the physician, as regards the school curriculum and its influence upon the development of the child. We may, by reason of our purely materialistic tendencies, have some difficulty in grasping the exact meaning of pedagogic therapeutics and hygiene, as well as psychologic pathology, but otherwise there is certainly no ambiguity in stating the case.

It is perhaps true that the physician is often too radical, and that occasionally when in doubt, liable to err on the side of physical well being. Occasionally he may also be guilty of humoring the wishes of an hysterical parent. Errors of this sort are a necessary concomitant of the imperfections and shortcomings of human reason and human nature. When, however, we study the basis of such criticisms as have been offered by Hasse, Pellmann ,Nathan Oppenheim, Francis Warner, Bowditch, J. M. Rice and others, whose reasons are not based upon inference, but upon the data—possiblyyet too meager—furnished by physiologic and anthropometric observations. From data already at our disposal, it is clearly evident, 1, that mental and physical abnormalities exist in school children and, 2, that these abnormalities are always aggravated, if indeed they are not actually produced by pedantic, pseudo-educational methods.

As a matter of fact, the physician's capability and wisdom in educational matters has always been acknowledged in the most difficult department of education, that of the mentally and physically defective, i. e., idiots, imbeciles, the feeble-minded and the defective classes. When, indeed, reason becomes deranged he is called upon to restore it to its normal balance, which he often succeeds in doing, not by the administration of medicine, but by the adaptation of wise training and the judicious application of the laws of physical and mental hygiene. It appears, therefore, eminently proper for the physician to interfere in matters relating to school hygiene, even though this may involve the criticism of the curriculum and also some of the more absurd conclusions of psychologic pedagogy.

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* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Diseases of Children, and approved for publication by the Executive Committee of the Section: Drs. H. E. Tuley, Edwin Rosenthal and Samuel W. Kelley.

[1] Report of Commissioner of Education, 1895-6, p. 1191.

Very briefly and imperfectly epitomized, the general import of the medical protests against the prevailing public educational methods may be summarized as follows:

1. We insist that there is no evidence by which educational values can be determined, except through the study of material manifestations transmitted through the nervous system. Thought and mind are immaterial, but we have no way of measuring, or estimating the value or extent of their action, except through the evidences of material production. For this reason we are forced to study the physical and physiologic changes produced in the body as the result of psychologic activity.

2. Education produces nothing new in the child: it simply unfolds and brings into intelligible activity the latent forces of the nervous system. Most of us agree with Prof. H. H. Donaldson,[2] who says, "Education consists in the modification of the central nervous system."

3. One of the most important and essential prerequisites necessary for a good education is good nutrition. Psychologically, mind is immaterial, but physiologically, we are forced to the conclusion that sane thought and vigorous intellectual activity is possible only through the medium of brain cells that are well nourished and physiologically active. It appears, therefore, entirely reasonable and logical to conclude that all educational methods which ignore the physiologic evolution of the child, are faulty and open to criticism, from the physiologic and hygienic standpoint. As a matter of fact, we not only ignore the most obvious requirement of practical hygiene in our school curriculum, but we insist upon a uniformity of educational training which is physiologically as absurd as it is impossible of practical application. "In fact," says Dr. Nathan Oppenheim,[3] "I know of no harder experience, no more trying ordeals than what a child at this time undergoes. His experiences in the school environment are designed to encourage irritation and waste of nerve and muscle tissue; the circumstance of instruction are useful for deadening, instead of encouraging, a normal standard of intellectual development."

When we consider how variable is the inherent mental capacity of children, in fact so variable and so difficult to determine that we find it almost impossible to draw a line of demarcation between the normal and the abnormal child; when we consider that this constant variability to respond to educational stimuli, so manifest at all the different stages of development, it becomes evidently absurd to attempt to lay out a uniform system of mental training applicable to all alike, exclusive of pronounced idiots and imbeciles. That this method does injury to a great many children is not only the testimony of physicians, but also of a great many progressive educators and thinkers as well.

Regarding the influence of school life upon normal, healthy children, Dr. Francis Warner, London, says: "I do not think that the boy or girl at the older ages of school life, who is free from developmental defects of any kind and shows no abnormal nerve signs or indications of delicacy, i. e., the normal child, is very likely to fall into ill health or a nervous condition if a wisely conducted training at school is continued. Of the 100,000 children that I have examined at schools, 80 per cent. of the boys and 84.10 per cent. of the girls were normal and not reported as dull mentally. It is, however, far otherwise with the children who have some defect; anemia, nervous disturbances or hysteria may become manifest as adolescence approaches, especially in girls. When such becomes established, particularly if anemia and nerve disturbance occur together, a long period of ill health may result."[4]

His table of statistics shows, of all cases with developmental defects at all ages, 38.4 per cent. of the girls, and 49.9 per cent. of the boys were mentally dull. Of all dull children, at all ages, 57.6 per cent. boys and 52.6 per cent. girls also presented abnormal nerve signs. This appears to indicate that about 18 per cent. of the children examined have some developmental defect, and that of these defectives 44 per cent. are mentally dull.

It is impossible, by reason of insufficient data, to form a reasonable, accurate estimate of the existing number of defective children which imperatively demand special school training. In Germany and England, where special classes are maintained for defective children, they average about 1 per cent. of the school population. Dr. Charles F. Folsom[5] gives the number of pronounced intellectual idiots and imbeciles as 1 to 650 of population. That we have in our public schools a very large percentage of mentally abnormal and physically defective children who require segregation and special training is evident from the physiologic and anthropometric examinations made in many of our cities.

I have briefly referred to this subject of the dull, the backward and the defective child, to emphasize the practical value of regular, periodic, physiologic examination of school children. Such examinations would disclose incipient cases, classified by teachers as dull, stupid, backward, disorderly or incorrigible, when in reality the child is the subject of some developmental abnormality, which makes ordinary school work intolerable to him. The early discovery of these cases and their segregation for special training is one of the important problems of public school life. Pupils of this character are a drag and a danger to the normal child. I am fully aware of the practical difficulties to be met in a solution of this question; but that these are not insurmountable has been shown by the experience in some of the European countries.

The study of the defective, i. e., the idiot, the feeble-minded, and persons afflicted with sensory aphasia resulting from an injury to the central sensory nerve cells, has made it possible for us to understand in a measure how ideas are built up during the developmental period. The fact that these observations are based upon changes that may be termed pathologic does not diminish their practical value.

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[2] Growth of the Brain, p. 338.

[3] Development of the Child.

[4] "The Study of Children," Francis Warner, MacMillan & Co., p. 190.

[5] Pepper: System of Med., vol. v, p. 140.

The mentally defective represents arrested brain nutrition, partial or total, at an early period of development. It was early shown by Dr. Sequin and others that a partial restoration of the dormant nerve cells of the idiotic brain could be effected by the application of judicious training along the lines of primitive development. The recognition of this principle has done wonders for the idiot, so that he has not only been improved, but even educated and cured. These well-known facts are referred to because they clearly indicate that the early school training of the child is largely a problem of localization of stimuli at different points in the nerve centers. This stimulation, if it is not prolonged to such an extent as to produce fatigue, promotes nutrition and tends to the reproduction of the action after a period of rest.

That we have vastly overrated the intellectual value of this formal training to the child there can be no doubt. That we have carried it to unreasonable extremes and burdened it with artificial, psychologic, and other incomprehensible nonsense is undeniable.

Returning again to the normal child, it is a mere truism, often enough reiterated, to state that our schools should have the benefit of good hygiene, good light. proper heating, ventilation and seating. Regarding these matters there is general agreement so that improvements in these departments are simply a matter of financial and mechanical detail. When, however, we come to the more vital and difficult problem of the school curriculum and the general methods of training to be adopted in early school life, viz., the number of hours that should be given each day to purely mental tasks, and the age at which school life should begin, there is very general disagreement between the physician and the routine pedagogue.

When we insist upon the fact that well-known physiologic studies show that the child is an exceedingly immature and delicate animal, undergoing important developmental changes having no analogoues in the adult; that his plastic tissues and delicate nerve cells are easily warped and injured by long-continued mental or physical efforts; when we report that children have actually been injured by injudicious school work, and that for this and other reasons, we favor shorter hours, more attention to the physical side of the child, more nature study out of doors in contact with actual natural objects, less of text-books and less of the exhaustive rote drill, which simply burdens the memory; when we insist upon these things as a natural outcome of the observations of the laws of development, we are told that these are questions of psychologic pedagogy, which must be settled by the pedagogues themselves. While it is true that the practical details must be left to the teachers, it does not follow that they are to control absolutely the principles upon which we desire to have our children educated. This would be equivalent to saying that we, as physicians, should have absolute control over the treatment of our patients, irrespective of the consent of the patient and his family. The absurdity of such a proposition is still more apparent when we consider the fact that the pedagogues disagree on both diagnosis and treatment.

As regards the claim that physicians base their criticism upon inference, it can be very easily shown that this is not the fact. As an illustration, I submit the following case:

O. N. is aged nearly 10 years, at the opening of school, September, 1900. Stature, weight and development are normal. There are no physical defects, unless left-handedness can be so called. He has attended public school since 7 years of age. Mental faculties are good, except a little slow to learn to repeat texts from memory. The daily attendance at school from 9 a.m. to 12; and from 1:15 to 4 p.m. At the opening of the school year this boy is in good flesh, with nutrition, sleep, appetite and digestion good, presenting in every way the physical features of a normal, vigorous boy. After some months of school each year he gradually grows thinner, becomes restless, nervous, fidgety and shows dark lines under the eyes. Toward the end of the school year these symptoms increase, the nervousness increases, digestion and nutrition are disturbed. He talks in his sleep, gets out of bed at night, wandering about the room, talking about his examples and his examinations. During the summer vacation, which lasts about three months, the abnormal physical symptoms gradually disappear, physical vigor is restored, the nervousness disappears and sleep becomes quiet and peaceful. This result occurs without medical treatment or change in the environment, except the omission of school work.

Now, is it mere inference when I say that the abnormal physical disturbances in this case are due to the fatigue produced by faulty educational methods? I have at two different periods of three months each taken this boy out of school and placed him under private instruction, with the result that he would accomplish fully as much intellectually in two hours' instruction per day as he did in six hours at school.

That cases of this sort are of common occurrence is well known to every observant practitioner. That injury is done in these cases is undeniable. That these abnormal consequences of pseudo-educational methods can and must be prevented, without detriment or hindrance to the child's intellectual development, is unquestionable.

Granted that our diagnosis is correct, rational preventive treatment would appear to be along lines already indicated, namely, the shortening of hours of the primary school to, say, one hour in the forenoon and one hour in the afternoon. If more time is to be taken up at school, it should be devoted to Slöyd or manual training, together with the study of Nature and natural life and its activities, as it exists in the child's environment.

That this is practically possible, and that the results are exceedingly favorable, has been shown by the experience at Girard College and other similar institutions. The elementary school of the University of Chicago, under Professor John Dewey, is a most excellent demonstration along the same lines.

Regular periodic medical inspection, which should include physiologic and anthropometric examination of the school-children, should be a requirement in all public schools. These examinations would not only furnish valuable physiologic and anthropometric data, but would disclose cases of infections and other communicable diseases. They would also detect mental and physical defects—stigmata—not readily recognized by parents and teachers. These children with marked mental and physical abnormalities, developmental defects, or stigmata, should be segregated for special training. Every town with a school population of from 800 to 1000 will have a sufficient number of children of this sort to fill a room, which should be in charge of a person having the exceptional qualifications necessary for success in this kind of work.

DISCUSSION OF PAPERS IN SYMPOSIUM ON SCHOOL HYGIENE.*

Dr. C. F. Wahrer, Fort Madison, Iowa—The series of papers on backward children showed a difference of opinion as to where the line of demarcation is to be placed between backward and normal children, and again between backward and defective children. In one of the papers appears the suggestion that for these backward children special schools should be maintained. This would be placing upon these unfortunate children a stigma which they do not deserve. To take a child who is pronounced to be backward by a teacher who has not made a special effort to develop the latent mental powers of the child, and place it in such special school seems to me entirely wrong. The best talent of the teacher should be brought to this work of developing the mental powers. A child may be backward only when forced to go in a direction counter to his natural trend, and prove to be a genius when allowed to develop in his proper direction.

Dr. Shelly, of Kansas—It seems that where a child under 10 or 12 years of age in a country school is brought into contact with a child in a city school it is found that the country child surpasses the city child. If anyone else has made this observation I should like to know it.

Dr. Clifton Scott, Des Moines—I do not think that the observation made by the last speaker is correct. I observed in one school that the country boys easily became leaders in their classes but that many of the "town" boys did just as well. It was only the boys from the country who had a special ambition to get a good education, and who were earnest in their work that came to the school, and this in itself would explain the difference, as it is not fair to compare these select few from the country with the city boys as a whole. The reason that Austin Flint was the greatest physiologist in this country was because he had specially good opportunities in early life. Much depends upon these early advantages, though I would not have it understood that I believe in crowding studies upon young children. However, the disadvantages from the loss of good, early opportunities can never be overcome.

Dr. Edwin Rosenthal, Philadelphia—In our city we have a wonderful institution, the Girard College. The plan adopted there is to teach the scholar aged from 6 years upward. Occasionally they meet with children who can not be taught, and all that they have been able to do with these is to make farmers of them.

Dr. James Work, Elkhart, Ind.—We have had papers presented this afternoon from so many different States that it is evident that the subject commands a very general interest. I infer from this that there must be a widespread defect in our school system, or else that we must be a degenerate race. I am of the opinion that the classification in our schools according to intellect is not carried out sufficiently, hence the studies are not well adapted to the individual needs of the pupils. I was much interested in what Dr. Darnall said about the ill effects of closely-fitting clothing, for, I believe it is a factor of considerable importance. In dressing children it is important to secure equal warmth and equal pressure when selecting their clothing. I am satisfied that physicians as a rule are not sufficiently emphatic in impressing upon parents, who have the greatest interest in our schools, the importance of the pupils attending to the organs of elimination. These organs are the bowel, skin, kidneys and lungs. One must expect a child to be dull if it goes to school daily without having had a proper evacuation of the bowel, or if baths are not had two or three times a week. Too, some of us do not understand the first principles of preparing food for children. The great need in most of our schools is that we have trained mothers at home.

Dr. A. W. Wilmarth, Chippewa Falls, Wis.—Mention has been made of the establishment of schools for backward children. Such schools have been already established in Providence and in Philadelphia. It would be well if teachers could give more time to individual pupils, but this is utterly impossible in the present state of our schools. Some provision must be made for these children.

Dr. B. R. Shurly, Detroit—It seems to me that one remedy is to be found in giving medical advice to the school board. Every such board in our larger cities employs legal counsel, yet, so far as I know, medical advice and supervision in our schools are sadly neglected. Along this line we certainly have work to do which will prove of great advantage to children, and particularly to those who are backward.

Dr. W. T. Learned, Fall River, Mass.—I have been interested in this subject since the rearing of my first-born child without his mother. I followed out the plan then in vogue of giving two waters and one milk, but finding that he did not do well I soon increased the proportion until the whole milk was given, and then the improvement was marked. I made the interval three hours, and the quantity that which the child could digest and be hungry by the time of the next feeding. This resulted in natural development. His school work began between the age of 11 and 12, at which time he weighed about 100 pounds. Field work was made a part of his education, and at the age of 18 he weighed 185 pounds. At the age of 21 he entered a university to study law, and passed with honor at the end of one, instead of two years. This picture is presented, not to show that there was anything unusual about the boy, but to emphasize what can be done by an entire freedom from cramming and the maintenance of good health. A moderate amount of brain work and the determination to do something constitute, in my opinion, the best education that we can give our boys and girls. I am totally opposed to the custom of putting a little one of 3 years in a kindergarten and keeping him in school until a diploma is presented as evidence of education. It seems to me that there is no greater defect than that of so drilling and perfecting children in tuition that they can get a living without work.

Dr. J. Noer, Stoughton, Wis.—I wish to emphasize that cases like the one I reported are common. By taking a child out of school and placing him under a private tutor for two hours a day he can accomplish just as much as in six hours at school, while at the same time the nervous symptoms will disappear. I fully concur with Dr. Rosenthal that the method pursued in Girard College is an ideal one. An experiment along the same line is now going on in Chicago, in the Elementary School of the University of Chicago, in charge of Professor John Dewey. It seems to me that this opens up a great field for improvement in the education of young children. I have given this subject considerable attention as a physician and as a member of a school board, and I can not resist the conclusion that there is altogether too much pressure used in conjunction with the early education of the growing child. The physician has a duty to perform in this matter and he ought to use his influence for improvement. He should also be prepared to give an intelligent explanation of the physiologic side of this question to teachers and parents.

Tuberculosis as a Professional Disease.—The French law on industrial accidents is being revised, and one of the amendments proposed urges that tuberculosis be included in the list of professional affections, and that the latter should be regarded as industrial accidents and entail the same responsibility on the proprietor of the establishment. The *Progrès Médical* observes that if this amendment could be adopted the prophylaxis of tuberculosis in large cities would be immeasurably promoted. The victims of professional affections, it states, are more deserving of interest than the victims of industrial accidents, as the latter are frequently due to some imprudence on the part of the workman, while a professional affection is almost invariably the result of the negligence of the proprietor to provide sanitary conditions or to his insisting upon the use of a poisonous substance, because it is cheaper, when a harmless substitute is available. To include tuberculosis among the professional diseases, it adds, and to enforce the penalties, would do more for actual progress than twenty anti-tuberculosis congresses.

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* Papers by Drs. Baker, Wilmarth, Makuen and Wahrer published Oct. 12, 1901.

THE OFFICIAL REPORT ON THE CASE OF PRESIDENT M'KINLEY.

SURGICAL HISTORY.

President William McKinley was shot, by Leon F. Czolgosz, in the Temple of Music, at the Pan-American Exposition, Buffalo, N. Y., at about 7 minutes past 4 on the afternoon of Friday, September 6, 1901. Two shots were fired. One bullet struck near the upper part of the sternum, and the other in the left hypochondriac region. The President was immediately conveyed to the Emergency Hospital on the Exposition grounds by the motor ambulance, where he arrived at 4:18. Dr. G. McK. Hall and Mr. Edward C. Mann, medical student, of the house staff, were in charge of the ambulance, Medical Student T. F. Ellis being the driver.

On arriving at the hospital, President McKinley was at once placed upon the table in the operating room and undressed. During the removal of his clothing a bullet fell out and was picked up by Mr. Ellis. Dr. Hall placed a temporary antiseptic dressing over the wounds, and Mr. Mann ordered a nurse to administer 0.01 gm. of morphin and 0.002 gm. of strychnin hypodermically.

Dr. Herman Mynter, who had been telephoned from police headquarters to report immediately at the Exposition hospital, was the first surgeon to arrive, at 4:45 o'clock. At that time Drs. P. W. Van Peyma and Joseph Fowler, of Buffalo, and Dr. Edward Wallace Lee, of St. Louis, were present. Dr. Mynter brought with him Dr. Eugene Wasdin, of the United States Marine-Hospital Service.

Dr. Mynter inspected the President's wounds, and immediately saw their serious nature. He told the President that it would be necessary to operate, and at once set about making preparations, aided by the house staff and nurses and Dr. Nelson W. Wilson, Sanitary Officer of the Exposition, who at that time assumed charge of the hospital in the absence of Dr. Roswell Park, the Medical Director of the Exposition. The President's pulse on the arrival of Dr. Mynter was 84; he had no particular pain in the abdomen, and no apparent loss of liver dulness. He was evidently slightly under the influence of the morphin.

Dr. Matthew D. Mann arrived at the hospital at 5:10 p. m., having been telephoned for by Mr. John C. Milburn. He was followed, five minutes later, by Dr. John Parmenter.

An examination was at once made, followed by a short consultation between Drs. Mann, Mynter and Wasdin, which resulted in the decision to operate at once. The necessity for the operation was explained to President McKinley, and he gave his full consent. Immediate operation was decided upon because of the danger of possible continued internal hemorrhage and of the escape of gastric or intestinal contents into the peritoneal cavity, and because the President's pulse was getting weaker. Moreover, the daylight was rapidly failing. Dr. Roswell Park, who, by virtue of his office, had he been present would have performed the operation, was at Niagara Falls, and although a special train had been sent for him, it was uncertain when he would arrive.

Dr. Mann was selected to do the operation, with Dr. Mynter as his associate, by the common consent of the physicians present and at the request of Mr. Milburn, president of the Pan-American Exposition, who stated that he had been requested by President McKinley to select his medical attendants. Dr. Mann selected Drs. Lee and Parmenter as assistants.

At 5:20 Dr. Mann directed the administration of ether to President McKinley, and requested Dr. Wasdin to administer it. Ether was chosen as being, on the whole, the safer anesthetic. While the anesthetic was being given the surgeons who were to take part in the operation prepared their hands and arms by thoroughly scrubbing with soap and water and immersing them in a solution of bichlorid of mercury.

The operation began at 5:29. Dr. Mann stood upon the right-hand side of the patient, with Dr. Parmenter on his right-hand side. Dr. Mynter stood upon the left-hand side of the patient, and on his right was Dr. Lee. To Drs. Parmenter and Lee were assigned the duties of sponging and the care of the instruments. Dr. P. M. Rixey, U. S. N., President McKinley's family physician, having been detailed by the President to accompany Mrs. McKinley to the Milburn home, did not arrive until 5:30, when he gave very efficient service by guiding the rays of the sun to the seat of the operation by aid of a hand-mirror, and later by arranging an electric light. Dr. Roswell Park arrived just as the operation on the stomach was completed, and gave his aid as consultant. Mr. E. C. Mann had charge of the needles, sutures and ligatures. Mr. Simpson, medical student, was at the instrument tray.

The nurses, under the charge of Miss A. C. Walters, superintendent of the hospital, were Miss M. E. Morris and Miss A. D. Barnes, with hands sterilized; Miss Rose Baron, Miss M. A. Shannon and Miss L. C. Dorchester, assistants, and Miss Katharine Simmons attending the anesthetizer.

Besides those immediately engaged in the operation, there were present Drs. P. W. Van Peyma, Joseph Fowler, D. W. Harrington and Charles G. Stockton, of Buffalo, and Dr. W. D. Storer, of Chicago.

THE OPERATION.

President McKinley took the ether well, and was entirely under its influence in nine minutes after the beginning of the anesthetization. The abdomen was carefully shaved and scrubbed with green soap, and then washed with alcohol and ether and the bichlorid solution.

Inspection showed 2 wounds made by the bullets. The upper one was between the second and third ribs, a little to the right of the sternum. The use of a probe showed that the skin had not been penetrated, but that the bullet had probably struck a button or some object in the clothing which had deflected it. The lower wound made by the other bullet—a 32-caliber—was on a line drawn from the nipple to the umbilicus. It was about half-way between these points, and about 5 cm. to the left of the median line. A probe showed that this wound extended deeply into the abdominal walls, and that the direction was somewhat downward and outward.

An incision was made from the edge of the ribs downward, passing through the bullet wound and nearly parallel with the long axis of the body. A deep layer of fat was opened, and followed by incision of the fascia and muscles to the peritoneum. After cutting through the skin, a piece of cloth, undoubtedly a bit of the President's clothing, was removed from the track of the bullet, a short distance below the skin.

On opening the peritoneum, the finger was introduced and the anterior wall of the stomach palpated. An opening was discovered which would not quite admit the index finger. This opening was located near the greater curvature of the stomach, and about 2 cm. from the attachment of the omentum; its edges were clean-cut and did not appear to be much injured.

The stomach was drawn up into the operation wound, and the perforation very slightly enlarged. The finger was then introduced and the contents of the stomach palpated. This was done to see if the stomach contained food, and also with the hope that possibly the bullet might be in the stomach. The stomach was found to be half-full of liquid food, but no evidence of the ball was discovered. In pulling up the stomach a small amount of liquid contents escaped, together with a good deal of gas. The tissues around the wound were carefully irrigated with hot salt solution and dried with gauze pads. The perforation in the anterior stomach wall was then closed with a double row of silk suture (Czerny-Lembert). The sutures were not interrupted with each stitch, but 4 stitches were introduced before the ends were tied. The loop was then cut off and the suture continued. About 8 stitches were used in each row. The silk used was fine black silk, the needle being a straight, round sewing needle.

In order to examine the posterior wall of the stomach, it was necessary to enlarge the incision, which now reached about 15 cm. in length. The omentum and transverse colon were pulled well out of the abdomen. The omentum was enormously thickened with fat and very rigid. In order to reach the back wall of the stomach, it was necessary to divide about 4 inches of the gastrocolic omentum, the cut ends being tied with strong black silk in 2 masses on each side. In this way the stomach could be drawn up in the operation wound, and the bullet wound in its posterior wall reached. This opening was somewhat larger than that in the anterior wall of the stomach, and had frayed and blood-infiltrated edges. Its exact location was impossible to determine. but it appeared to be near the larger curvature.

This opening was closed in the same way as the anterior wound, but with great difficulty, as the opening was down at the bottom of a deep pocket. A short curved surgical needle was necessary here. Little or no gastric contents appeared around this opening, but after it had been closed the parts were carefully irrigated with hot salt solution.

The operation on the stomach being now finished, Dr. Mann introduced his arm so as to palpate carefully all the deep structures behind the stomach. No trace of the bullet or of the further track of the bullet could be found. As the introduction of the hand in this way seemed to have a bad influence on the President's pulse, prolonged search for further injury done by the bullet or for the bullet itself was desisted from. The folds of the intestine which had been below the stomach were inspected for injury, but none was found. The entire gut was not removed from the abdomen for inspection, as the location of the wound seemed to exclude its injury. To have made a satisfactory search for wounds in the President's back, it would have been necessary to have entirely eviscerated him. As he was already suffering from shock, this was not considered justifiable, and might have caused his death on the operating table.

Before closing the abdominal wound, Dr. Mann asked each of the surgeons present, whether he was entirely satisfied that everything had been done which should be done, and whether he had any further suggestions to make. Each replied that he was satisfied. The question of drainage was also discussed. Dr. Mynter was in favor of a Mikulicz drain being placed down behind the stomach-wall. Dr. Mann, with the concurrence of the other surgeons, decided against this, as being unnecessary.

As the last step in the operation, the tissues around the bullet track in the abdominal wall were trimmed, in order to remove any tissue which might be infected. The abdominal wound was then closed with 7 through-and-through silkworm-gut sutures, drawn only moderately tight, the superior layer of the fascia of the rectus muscle being joined with buried catgut. The edges of the skin were brought together by fine catgut sutures. Where the bullet had entered there was slight gaping of the tissues, but it was not thought advisable to close this tightly, as it might allow of some drainage. The wound was then washed with hydrogen dioxid and covered with aristol powder and dressed with sterilized gauze and cotton, which were held in place with adhesive straps. Over all was put an abdominal bandage.

The President bore the operation very well. The time from the beginning of the administration of the anesthetic until its discontinuance was exactly an hour and 31 minutes; the operation was completed at 6:50 p. m., having lasted from the time of the first incision, an hour and 21 minutes. At the beginning of the operation President McKinley's pulse was 84. At 5:38, 0.002 gm. of strychnin was administered hypodermically. At 5:55 the respiration was 32 and the pulse 84—both good in character. At 6:09 the pulse was 88. At 6:20 it was 102, fair in character; respiration 39. At 6:22, 1.50 gm. of brandy was administered hypodermically. At 6:48 the pulse was 124, the tension good but quick; respiration 36. At 7:01, after the bandage was applied, the pulse was 122 and the respiration 32. At 7:17, 0.004 gm. of morphin was administered hypodermically.

At 7:32 the patient was removed from the hospital in the ambulance. Dr. Rixey asked Drs. Park and Wasdin to go in the ambulance as his duty called him to go at once to inform Mrs. McKinley of her husband's condition and to prepare a room for his reception. Drs. Mann and Mynter, with friends of the President, followed in carriages immediately after. President McKinley had not then recovered from the anesthetic. He bore the journey to Mr. Milburn's house exceedingly well, but it was found necessary to give him a small hypodermic injection of morphin during the transit, as he was becoming very restless. On arrival at the house of Mr. Milburn, 1168 Delaware Avenue, he was removed from the ambulance on the stretcher, and carried to a room in the northwest corner of the house, where a hospital bed had been prepared for him.

REMARKS ON THE OPERATION, BY MATTHEW D. MANN, M.D.

The difficulties of the operation were very great, owing partly to the want of retractors and to the failing light. The setting sun shone directly into the room, but not into the wound. The windows were low and covered with awnings. After Dr. Rixey aided us with a hand mirror, the light was better. Toward the end of the time a movable electric light with reflector was put in use. The greatest difficulty was the great size of President McKinley's abdomen and the amount of fat present. This necessitated working at the bottom of a deep hole, especially when suturing the posterior wall of the stomach.

The operation was rendered possible and greatly facilitated by a good operating table and the other appliances of a hospital, and by the presence of many trained nurses and assistants. Still, the hospital was only equipped for minor emergency work, and had but a moderate supply of instruments. Unfortunately, when called I was not told what I was wanted for, and went to the Exposition grounds entirely unprepared. Dr. Mynter had his large pocket case, the contents of which were of great use.

As has already been noted, further search for the bullet was rendered inadvisable by the President's condition. The autopsy shows that it could not have been found, and that the injuries inflicted by the bullet after it passed through the stomach were of such a nature as to render impossible and unnecessary any further surgical procedure. A bullet after it ceases to move does little harm. We were often asked why, after the operation, we did not use the x-ray to find the bullet. There were several reasons for this. In the first place, there were at no time any signs that the bullet was doing harm. To have used the x-ray simply to have satisfied our curiosity would not have been warrantable, as it would have greatly disturbed and annoyed the patient, and would have subjected him also to a certain risk. Had there been signs of abscess-formation, then the rays could and would have been used.

My reason for not draining was that there was nothing to drain. There had been no bleeding nor oozing; there was nothing to make any discharge or secretion; the parts were presumably free from infection, and were carefully washed with salt solution. As there was no peritonitis and the abdomen was found postmortem to be sterile, we may safely conclude that no drainage could have been provided which would have accomplished anything. My experience teaches me never to drain unless there is a very decided indication for it, as a drain may do harm as well as good.

In conclusion, I wish to thank all the gentlemen who so kindly and skilfully assisted me. They were all surgeons of large experience in abdominal surgery, and their aid and advice were most valuable. Especially I wish to acknowledge my great obligation to my associate, Dr. Mynter. Not only was he an assistant, but he was much more, and helped me greatly by his skill and, as a consultant, with his good judgment and extensive knowledge of abdominal work. Although called first, he waived his claim, and generously placed the case in my hands, willingly assuming his share of the responsibility.

The anesthetic was most carefully administered by Dr. Wasdin, and the knowledge that he had charge of this very important duty relieved me of any anxiety on that score.

In the eventful week that followed the operation, Dr. Park and Dr. McBurney were towers of strength in helping to decide the many difficult questions which came up.

Dr. Rixey was in constant charge of the sick-room, aided later by Dr. Wasdin, who was detailed for this special duty. Both were unremitting in their care, and faithful to the end.

Dr. Stockton helped us in the last 3 days with the highest skill and best judgment.

Never, I am sure, under like circumstances, was there a more harmonious or better-agreed band of consultants. That our best endeavors failed was, I believe, no fault of ours; but it must be an ever-living and keen regret to each of us, that we were not allowed the privilege of saving so noble a man, so attractive a patient, and so useful a life.

THE AFTER-TREATMENT.

When put to bed the President was in fair condition: Pulse, 127; temperature, 100.6 degrees; respiration, 30. The nurses on duty were Miss K. R. Simmons and Miss A. D. Barnes, from the Emergency Hospital. Soon after his arrival, at 8:25, he was given morphin, 0.016 gm., hypodermically. There was slight nausea. The pulse soon improved. During the evening the patient slept at intervals, vomiting occasionally, but rallied satisfactorily. A slight discoloration of the dressings was noted at 10:45. There was occasional and slight pain. Ninety cc. of urine was voided, and an enema of salt solution given and retained.

SECOND DAY, SATURDAY, SEPTEMBER 7.

After midnight the patient slept a good deal; he was free from pain and quite comfortable.

At 6 a. m., the temperature was 102; pulse, 110; respiration, 24.

Gas in large quantities was expelled from the bowels. A saline enema was given as before. Miss Simmons and Miss Barnes were replaced by Miss Maud Mohan and Miss Jane Connolly. Miss E. Hunt, of San Francisco, Cal., Mrs. McKinley's nurse, also rendered assistance, and Miss Grace Mackenzie, of Baltimore, Md., arrived September 9, and was detailed for regular duty. P. A. Eliot, J. Hodgins and Ernest Vollmeyer, of the U. S. A. Hospital Corps, were detailed as orderlies.

During the forenoon, 0.01 gm. of morphin was administered hypodermically.

At 1:15 p. m., a saline enema of 500 cc. was given. As the pulse was rising, 0.06 gm. of fluid extract of digitalis was injected hypodermically.

The President rested quietly until 6:30 p. m., when he complained of intense pain in the pit of the stomach, and was given 0.008 gm. morphin sulphate hypodermically. He was very restless, but after being sponged rested again.

At 6:30 p. m., the pulse was 130; temperature, 102.5; respiration, 29.

During the day the digitalis, morphin and saline enemas were kept up at regular intervals; 4 gm. of somatose were added to the water at 10:30 p. m. At 11:15 p. m. the President passed from the bowels 240 cc. of a greenish colored fluid and some particles of fecal matter.

The total amount of urine for 24 hours was 270 cc.

FIRST URINALYSIS, BY DR. H. G. MATZINGER.

Quantity	30 cc.
Color	dark amber
Reaction	strongly acid
Urea	0.028 gm. per 1 cc. of urine
Albumin	a trace
Phosphates and chlorids	normal
Sugar.	none
Indican	very small amount

Microscopic Examination.—The sediment obtained by centrifuge shows a large amount of large and small epithelial cells with some leucocytes and occasional red cells. There is a comparatively large number of hyaline casts, principally small, with some finely granular ones; also an occasional fibrinous one. The amount of sediment is large for the quantity of urine submitted. There were no crystals in the sediment.

THIRD DAY, SUNDAY, SEPTEMBER 8.

During the early morning the President slept a good deal, but was restless, and at times confused and a little chilly. On the whole, he passed a fairly good night.

He expelled a little gas and brown fluid from the rectum. The digitalis was continued, and at 7:45 a. m., 0.002 gm. of strychnin was given hypodermically. At 8:20 a. m. he was clear and bright, with the pulse strong and of good character.

The wound was dressed at 8:30, and found in a very satisfactory condition. There was no indication of peritonitis. Pulse, 132; temperature, 102.8; respiration, 24.

The dressing on the wound was changed because there was some exudation. The bullet track was syringed out with hydrogen dioxid. There was very little foaming, and there were no signs of pus.

At 10:40 a. m., following an enema of epsom salts, glycerin and water, he had a small stool with gas, and another at noon. He was less restless and slept a good deal.

At noon Dr. Charles McBurney joined the medical staff in consultation, having been summoned by Dr. Rixey.

Bulletin 14, 12 m.—The improvement in the President's condition has continued since the last bulletin. Pulse, 128; temperature, 101°; respiration, 27.

During the day he continued to improve; he slept 4 or 5 hours and his condition was satisfactory.

At 4:45 p. m. he was given a teaspoonful of water by the mouth; also an enema of sweet oil, soap and water. He passed slightly colored fluid with some little fecal matter and mucus. After this he had a small quantity of water by the mouth, and at 6:20 p. m. a nutritive enema of egg, whiskey and water, which was partly retained. Digitalis and strychnin were both given during the evening.

At 9 p. m. the President was resting comfortably. The pulse was 130; temperature, 101.6; respiration, 30.

Four hundred and twenty c.c. of urine were passed during the day.

SECOND URINALYSIS.

Quantity	450 cc.
Color	amber, slightly turbid
Reaction	strongly acid
Specific gravity	1.026
Urea.	0.038 gm. per 1 cc. of urine
Albumin	mere trace
Sugar.	none
Indican	abundant
Sulphates	*increased*
Phosphates	somewhat increased
Chlorids	somewhat increased

Microscopic Examination.—Microscopic examination of sediment obtained by centrifuge shows fewer organic elements. Some large and small epithelial cells and some leucocytes. Casts are not so abundant as yesterday and are *principally* of the small finely granular variety. There is a marked diminution in small renal epithelial cells.

Quite a *quantity of large crystals of uric acid and bacteria* are present.

FOURTH DAY, MONDAY, SEPTEMBER 9.

The bulletins tell the story of the fourth day.

Bulletin 17, 6 a. m.—The President passed a somewhat restless night, sleeping fairly well. General condition unchanged. Pulse, 120; temperature, 101°; respiration, 28.

Bulletin 18, 9:20 a. m.—The President's condition is becoming more and more satisfactory. Untoward incidents are less likely to occur. Pulse, 122; temperature, 100.8°; respiration, 28.

Bulletin 19, 3 p. m.—The President's condition steadily improves and he is comfortable, without pain or unfavorable symptoms. Bowel and kidney functions normally performed. Pulse, 113; temperature, 101°; respiration, 26.

Bulletin 20, 9:30 p. m.—The President's condition continues favorable; Pulse, 112; temperature, 101°; respiration, 27.

Codeia was substituted for morphia, as the pain was less. Digitalis and strychnin were stopped. Nutritive enemas were given at 3:20 a. m., at 4:30 and 10 p. m. Hot water was taken quite freely by the mouth.

Attempts to get a good movement of the bowels were successful at noon, when he had a large, light-brown, partly-formed stool. This followed a small dose of calomel and a high enema of oxgall.

On the whole, the President's condition improved steadily during the day. He slept a good deal and was fairly comfortable. There was no pain on pressure over the abdomen.

THIRD URINALYSIS.

Quantity received	540 cc.
Color	amber, slightly turbid
Specific gravity	1.026
Albumin	a trace
Indican	not so abundant as yesterday
Urea	0.047 gm. per cc. of urine
Chlorids and phosphates	about normal
Sulphates	still somewhat high
Sugar	none

pulled well out of the abdomen. The omentum was enormously thickened with fat and very rigid. In order to reach the back wall of the stomach, it was necessary to divide about 4 inches of the gastrocolic omentum, the cut ends being tied with strong black silk in 2 masses on each side. In this way the stomach could be drawn up in the operation wound, and the bullet wound in its posterior wall reached. This opening was somewhat larger than that in the anterior wall of the stomach, and had frayed and blood-infiltrated edges. Its exact location was impossible to determine. but it appeared to be near the larger curvature.

This opening was closed in the same way as the anterior wound, but with great difficulty, as the opening was down at the bottom of a deep pocket. A short curved surgical needle was necessary here. Little or no gastric contents appeared around this opening, but after it had been closed the parts were carefully irrigated with hot salt solution.

The operation on the stomach being now finished, Dr. Mann introduced his arm so as to palpate carefully all the deep structures behind the stomach. No trace of the bullet or of the further track of the bullet could be found. As the introduction of the hand in this way seemed to have a bad influence on the President's pulse, prolonged search for further injury done by the bullet or for the bullet itself was desisted from. The folds of the intestine which had been below the stomach were inspected for injury, but none was found. The entire gut was not removed from the abdomen for inspection, as the location of the wound seemed to exclude its injury. To have made a satisfactory search for wounds in the President's back, it would have been necessary to have entirely eviscerated him. As he was already suffering from shock, this was not considered justifiable, and might have caused his death on the operating table.

Before closing the abdominal wound, Dr. Mann asked each of the surgeons present, whether he was entirely satisfied that everything had been done which should be done, and whether he had any further suggestions to make. Each replied that he was satisfied. The question of drainage was also discussed. Dr. Mynter was in favor of a Mikulicz drain being placed down behind the stomach-wall. Dr. Mann, with the concurrence of the other surgeons, decided against this, as being unnecessary.

As the last step in the operation, the tissues around the bullet track in the abdominal wall were trimmed, in order to remove any tissue which might be infected. The abdominal wound was then closed with 7 through-and-through silkworm-gut sutures, drawn only moderately tight, the superior layer of the fascia of the rectus muscle being joined with buried catgut. The edges of the skin were brought together by fine catgut sutures. Where the bullet had entered there was slight gaping of the tissues, but it was not thought advisable to close this tightly, as it might allow of some drainage. The wound was then washed with hydrogen dioxid and covered with aristol powder and dressed with sterilized gauze and cotton, which were held in place with adhesive straps. Over all was put an abdominal bandage.

The President bore the operation very well. The time from the beginning of the administration of the anesthetic until its discontinuance was exactly an hour and 31 minutes; the operation was completed at 6:50 p. m., having lasted from the time of the first incision, an hour and 21 minutes. At the beginning of the operation President McKinley's pulse was 84. At 5:38, 0.002 gm. of strychnin was administered hypodermically. At 5:55 the respiration was 32 and the pulse 84—both good in character. At 6:09 the pulse was 88. At 6:20 it was 102, fair in character; respiration 39. At 6:22, 1.50 gm. of brandy was administered hypodermically. At 6:48 the pulse was 124, the tension good but quick; respiration 36. At 7:01, after the bandage was applied, the pulse was 122 and the respiration 32. At 7:17, 0.004 gm. of morphin was administered hypodermically.

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REMARKS ON THE OPERATION, BY MATTHEW D. MANN, M.D.

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THE AFTER-TREATMENT.

When put to bed the President was in fair condition: Pulse, 127; temperature, 100.6 degrees; respiration, 30. The nurses on duty were Miss K. R. Simmons and Miss A. D. Barnes, from the Emergency Hospital. Soon after his arrival, at 8:25, he was given morphin, 0.016 gm., hypodermically. There was slight nausea. The pulse soon improved. During the evening the patient slept at intervals, vomiting occasionally, but rallied satisfactorily. A slight discoloration of the dressings was noted at 10:45. There was occasional and slight pain. Ninety cc. of urine was voided, and an enema of salt solution given and retained.

SECOND DAY, SATURDAY, SEPTEMBER 7.

After midnight the patient slept a good deal; he was free from pain and quite comfortable.

At 6 a. m., the temperature was 102; pulse, 110; respiration, 24.

Gas in large quantities was expelled from the bowels. A saline enema was given as before. Miss Simmons and Miss Barnes were replaced by Miss Maud Mohan and Miss Jane Connolly. Miss E. Hunt, of San Francisco, Cal., Mrs. McKinley's nurse, also rendered assistance, and Miss Grace Mackenzie, of Baltimore, Md., arrived September 9, and was detailed for regular duty. P. A. Eliot, J. Hodgins and Ernest Vollmeyer, of the U. S. A. Hospital Corps, were detailed as orderlies.

During the forenoon, 0.01 gm. of morphin was administered hypodermically.

At 1:15 p. m., a saline enema of 500 cc. was given. As the pulse was rising, 0.06 gm. of fluid extract of digitalis was injected hypodermically.

The President rested quietly until 6:30 p. m., when he complained of intense pain in the pit of the stomach, and was given 0.008 gm. morphin sulphate hypodermically. He was very restless, but after being sponged rested again.

At 6:30 p. m., the pulse was 130; temperature, 102.5; respiration, 29.

During the day the digitalis, morphin and saline enemas were kept up at regular intervals; 4 gm. of somatose were added to the water at 10:30 p. m. At 11:15 p. m. the President passed from the bowels 240 cc. of a greenish colored fluid and some particles of fecal matter.

The total amount of urine for 24 hours was 270 cc.

FIRST URINALYSIS, BY DR. H. G. MATZINGER.

Quantity	30 cc.
Color	dark amber
Reaction	strongly acid
Urea	0.028 gm. per 1 cc. of urine
Albumin	a trace
Phosphates and chlorids	normal
Sugar.	none
Indican	very small amount

Microscopic Examination.—The sediment obtained by centrifuge shows a large amount of large and small epithelial cells with some leucocytes and occasional red cells. There is a comparatively large number of hyaline casts, principally small, with some finely granular ones; also an occasional fibrinous one. The amount of sediment is large for the quantity of urine submitted. There were no crystals in the sediment.

THIRD DAY, SUNDAY, SEPTEMBER 8.

During the early morning the President slept a good deal, but was restless, and at times confused and a little chilly. On the whole, he passed a fairly good night.

He expelled a little gas and brown fluid from the rectum. The digitalis was continued, and at 7:45 a. m., 0.002 gm. of strychnin was given hypodermically. At 8:20 a. m. he was clear and bright, with the pulse strong and of good character.

The wound was dressed at 8:30, and found in a very satisfactory condition. There was no indication of peritonitis. Pulse, 132; temperature, 102.8; respiration, 24.

The dressing on the wound was changed because there was some exudation. The bullet track was syringed out with hydrogen dioxid. There was very little foaming, and there were no signs of pus.

At 10:40 a. m., following an enema of epsom salts, glycerin and water, he had a small stool with gas, and another at noon. He was less restless and slept a good deal.

At noon Dr. Charles McBurney joined the medical staff in consultation, having been summoned by Dr. Rixey.

Bulletin 14, 12 m.—The improvement in the President's condition has continued since the last bulletin. Pulse, 128; temperature, 101°; respiration, 27.

During the day he continued to improve; he slept 4 or 5 hours and his condition was satisfactory.

At 4:45 p. m. he was given a teaspoonful of water by the mouth; also an enema of sweet oil, soap and water. He passed slightly colored fluid with some little fecal matter and mucus. After this he had a small quantity of water by the mouth, and at 6:20 p. m. a nutritive enema of egg, whiskey and water, which was partly retained. Digitalis and strychnin were both given during the evening.

At 9 p. m. the President was resting comfortably. The pulse was 130; temperature, 101.6; respiration, 30.

Four hundred and twenty c.c. of urine were passed during the day.

SECOND URINALYSIS.

Quantity	450 cc.
Color	amber, slightly turbid
Reaction	strongly acid
Specific gravity	1.026
Urea.	0.038 gm. per 1 cc. of urine
Albumin	mere trace
Sugar.	none
Indican	abundant
Sulphates	increased
Phosphates	somewhat increased
Chlorids	somewhat increased

Microscopic Examination.—Microscopic examination of sediment obtained by centrifuge shows fewer organic elements. Some large and small epithelial cells and some leucocytes. Casts are not so abundant as yesterday and are *principally* of the small finely granular variety. There is a marked diminution in small renal epithelial cells.

Quite a quantity of large crystals of uric acid and bacteria are present.

FOURTH DAY, MONDAY, SEPTEMBER 9.

The bulletins tell the story of the fourth day.

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Bulletin 20, 9:30 p. m.—The President's condition continues favorable; Pulse, 112; temperature, 101°; respiration, 27.

Codeia was substituted for morphia, as the pain was less. Digitalis and strychnin were stopped. Nutritive enemas were given at 3:20 a. m., at 4:30 and 10 p. m. Hot water was taken quite freely by the mouth.

Attempts to get a good movement of the bowels were successful at noon, when he had a large, light-brown, partly-formed stool. This followed a small dose of calomel and a high enema of oxgall.

On the whole, the President's condition improved steadily during the day. He slept a good deal and was fairly comfortable. There was no pain on pressure over the abdomen.

THIRD URINALYSIS.

Quantity received	540 cc.
Color	amber, slightly turbid
Specific gravity	1.026
Albumin	a trace
Indican	not so abundant as yesterday
Urea	0.047 gm. per cc. of urine
Chlorids and phosphates	about normal
Sulphates	still somewhat high
Sugar	none

Microscopic Examination.—Microscopic examination of sediment obtained by centrifuge shows a decrease in the amount of organic elements and an increase of amorphous urates, but fewer crystals of uric acid. Casts are fewer and only the small granular and large hyaline varieties. The proportion of casts is greater. There are very few epithelial cells, mostly of renal type. A large number of cylindroids are found.

FIFTH DAY, TUESDAY, SEPTEMBER 10.

Soon after midnight the President had a high enema of soap and water, which was expelled, together with some fecal matter. He took hot water frequently, and slept a good deal.

Bulletin 21, 5:20 a. m.—The President has passed the most comfortable night since the attempt on his life. Pulse, 118; temperature, 100.4°; respiration, 28.

On awaking he felt very comfortable, and his mind was clear and cheerful. The nutritive enemas were kept up, and water given by the mouth. Had 2 small stools during the day. The only medicine given was one hypodermic of codeia phosphate, 0.015 gm.

In the evening the dressings were examined, and as there was considerable staining from the discharge, it was thought best to remove four stitches and separate the edges of the wound. A little slough was observed near the bullet track, covering a space nearly an inch wide, the thickness of the flaps. The separation seemed to extend down to the muscle. The surfaces, except those mentioned, looked healthy, but not granulating. It was supposed that the infection of the wound occurred either from the bullet or from the piece of clothing carried into the wound at the time of the shooting. The parts were thoroughly washed with hydrogen dioxid and packed lightly with gauze, and held together with adhesive straps.

SIXTH DAY, WEDNESDAY, SEPTEMBER 11.

Bulletin 26, 9 a. m.—The President rested comfortably during the night. Decided benefit has followed the dressing of the wound made last night. His stomach tolerates the beef juice well, and it is taken with great satisfaction. His condition this morning is excellent. Pulse, 116; temperature, 100.2°.

Bulletin 27, 3:30 p. m.—The President continues to gain, and the wound is becoming more healthy. The nourishment taken into the stomach is being gradually increased. Pulse, 120; temperature, 100.2°.

Bulletin 28, 10 p. m.—The President's condition continues favorable. Blood count corroborates clinical evidence of the absence of any blood poisoning. He is able to take more nourishment and relish it. Pulse, 120; temperature, 100.4°.

The blood count made by Dr. Wasdin in the evening was as follows:

Leucocytes	6,752
Red cells	3,920,000

A little after midnight, Wednesday morning, the patient was given 4 cc. of beef juice, the first food taken by the stomach. It seemed to be very acceptable. Nutritive enema was given at 2 a. m.; later there was a yellow stool.

From 4 to 8 c.c. of beef juice were given every 1 to 2 hours during the day. The rectum was becoming irritable, and did not retain the nutritive enemas well.

At 10 a. m. the remaining stitches were removed, the wound separated and dressed. It seemed to be doing well. Most of the sloughing tissue had separated.

The patient slept much during the day, and expressed himself as feeling very comfortable. The only medicine administered was 1 hypodermic of strychnin.

In the evening he was changed to a fresh bed. Nutritive enemas were continued.

Urine was passed much more freely—750 cc. in 24 hours.

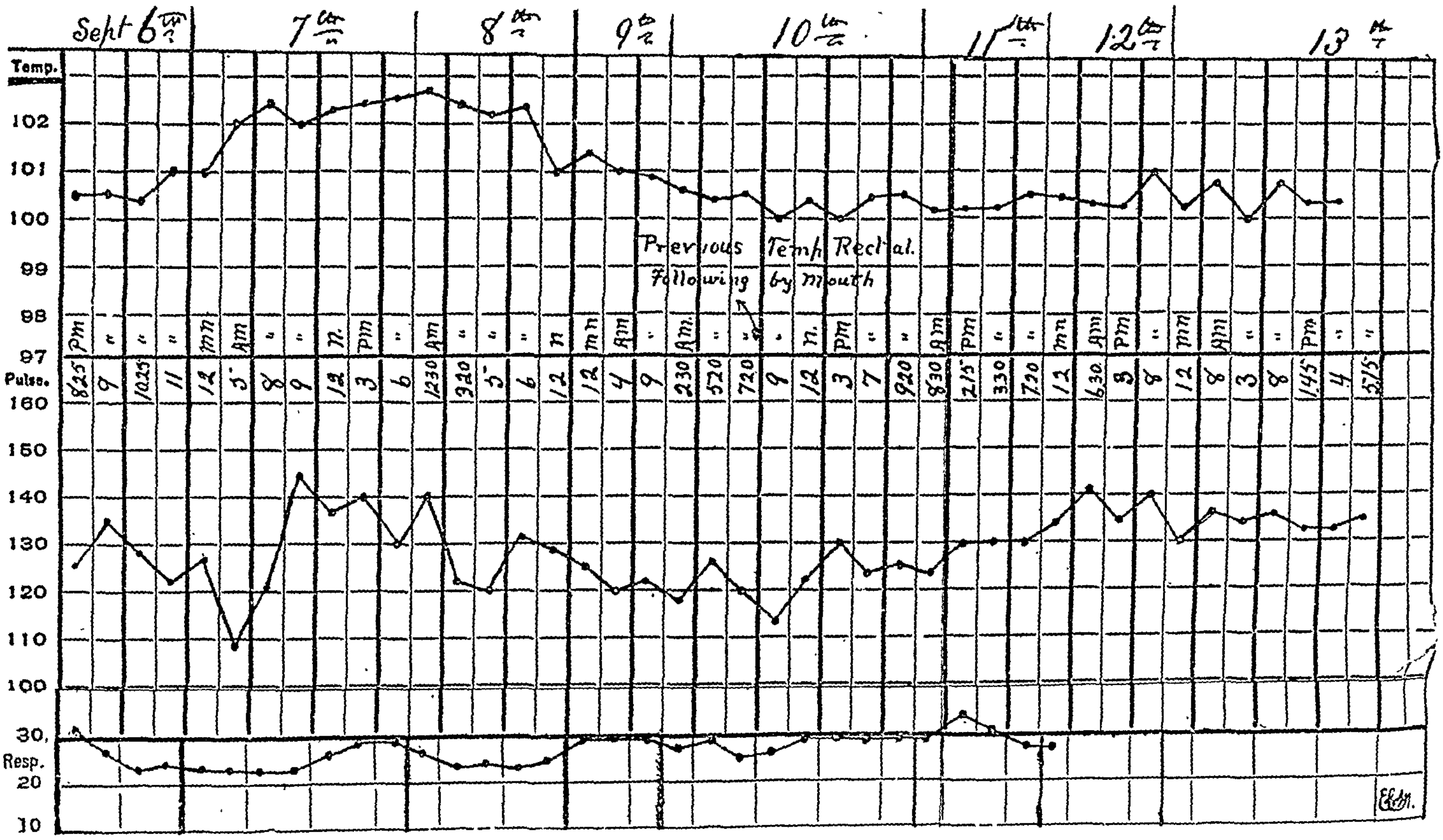

CHART OF PULSE, TEMPERATURE AND RESPIRATIONS. CASE OF PRESIDENT M'KINLEY.

FOURTH URINALYSIS.

Quantity	82 cc.
Color	amber, clear
Specific gravity	1.027
Reaction	strongly acid
Albumin	a trace
Indican	abundant
Urea	0.04 gm. per 1 cc. of urine
E. phosphates and chlorids	normal
Sulphates	still a little high

Microscopic Examination.—Microscopic examination of sediment obtained by centrifuge shows a marked diminution in amount of organic elements, but a great increase in uric acid crystals.

There are very few epithelial cells—mostly of renal type.

There are fewer casts—small and large hyaline—some finely granular.

Cylindroids are more abundant.

SEVENTH DAY, THURSDAY, SEPTEMBER 12.

The President slept a good deal during the night and awoke in the morning feeling better. The beef juice was continued and increased, and a little chicken broth added to the dietary. He also had a little whiskey and water.

At 8:30 a. m. he had chicken broth, a very small piece of toast and a small cup of coffee. He did not care for the toast, and ate scarcely any of it.

The wound was dressed and washed with a weak solution of iodin and then with hydrogen dioxid. He was given 30 cc. of castor oil at 9:20 a. m.

The President now seemed at his best and his condition to warrant the favorable prognosis given out. The time for peritonitis and sepsis had passed. The bowels had moved and gas passed freely, showing that there was no obstruction. The tongue was clear, and the appetite increasing; and he seemed to be able to digest food. There was no pain nor tenderness in the abdomen, and he was able to turn easily and to sleep on his side. The urine was steadily increasing. His spirits were good and his mind clear, while his pulse, though frequent, was strong and of good quality, and the temperature low.

The analysis of the urine gave no uneasiness, as the amount of urea was fair; there was no albumin worth considering, and the casts were rapidly diminishing. There were no more of them than are found in a large percentage of cases following a long operation under ether. The excess of indican was taken to mean merely some intestinal indigestion, and to be of no serious import. The only symptom to cause any uneasiness was the frequency of the pulse. Still, anxiety on this score was relieved by knowing that the President had naturally a rapid pulse, and that it was easily excited. The open wound was not considered important. It looked healthy, and, although it would take a long time to heal, in itself it was evidently causing no harm, nor was it likely to.

Dr. McBurney left Buffalo for his home in the morning, having arranged to return at once if his presence was desired.

Toward noon it was noticed that the character of the pulse was not quite so good. Infusion of digitalis, 8 cc., was ordered, *and strychnin, 0.002 gm.*

It was thought probable that there was some intestinal toxemia, as there had been no free movement from the bowel since food had been begun, the oil having failed to act. Gradually the pulse went to 130, and grew weaker.

Dr. Charles G. Stockton was added to the medical staff in consultation. At 7 p. m. the President was given 0.20 gm. of calomel.

Bulletin 32, 8:30 p. m.—The President's condition this evening is not quite so good. His food has not agreed with him, and has been stopped. Excretion has not yet been properly established. The kidneys are acting well. His pulse is not satisfactory, but has improved in the last two hours. The wound is doing well. He is resting quietly. Temperature, 100.2°; *pulse, 128.*

At *9:30* p. m. a second dose of 30 cc. of castor oil was given, followed by a high enema of oxgall. This resulted in a large, *dark* semifluid stool, which seemed to exhaust him somewhat. Stimulants were given freely. No more beef juice or food was given. The pulse grew rapidly worse, but *at midnight* there seemed some improvement, as bulletin 33 shows. At 11 p. m. *420* cc. of normal salt solution were given subcutaneously.

Bulletin 33, 12 m.—All unfavorable symptoms in the President's condition have improved since the last bulletin. Pulse, 120; temperature, 100.2°.

FIFTH URINALYSIS.

Quantity	132 cc.
Color	light amber, very turbid
Specific gravity	1.025
Reaction	acid
Albumin	mere trace, if any
Indican	less
Urea	0.044 gm. per 1 cc. of urine
Sulphates	about normal
E. phosphates	*much increased*
Chlorids	normal

Microscopic Examination.—Microscopic examination of sediment *obtained* by centrifuge shows fewer organic elements than the last examination. There is less uric acid and a large amount of amorphous phosphates. Renal casts, about as in the last *examination*, with very few cylindroids.

EIGHTH DAY, FRIDAY, SEPTEMBER 13.

At midnight the pulse was fairly good, 132. *Strychnin and* whiskey were given at intervals, and hypodermics of camphorated oil.

Bulletin 34, 2:50 a. m.—The President's condition is very serious, and gives rise to the gravest apprehension. His bowels have moved well, but his heart does not respond properly to stimulation. He is conscious. The skin is warm, and the pulse *small, regular, easily compressible,* 126; respiration, 30; temperature, 100°.

The wound had been dressed regularly in the manner described 3 times a day. At 9 a. m. the dressing was changed, and a mixture of balsam of Peru and glycerin put in on gauze after the douching.

Stimulants were *continued* as before, but more freely. Coffee, 45 cc., and clam broth, 60 cc., were given; also liquid *peptonoids.*

At 8:30, 1.50 gm. of adrenalin were given hypodermically, and repeated at 9:40.

At 10 a. m., *nearly 2 pints of normal salt solution* were given under the skin, and a pint containing adrenalin at 6 p. m. Nitroglycerin and camphor were also injected at various times, together with brandy and strychnin.

Stimulants as detailed above were used freely all day.

Three-thirty p. m.:Pulse growing weaker.

Five p. m.: Oxygen given and continued for some hours.

Six-thirty p. m.: Last bulletin, No. 39:

Bulletin 39, 6:30 p. m.—The President's physicians report that his condition is most serious in spite of vigorous stimulation. The depression continues and is profound. Unless it can be relieved, the end is only a question of time.

At 6:35 p. m., and again at 7:40, morphin was given hypodermically, as he was very restless and seemed to be suffering.

Nine p. m.: Heart sounds very feeble.

The President continued to sink, becoming weaker and weaker.

At 10 p. m. the oxygen was discontinued. The heart sounds were very feeble and consciousness lost.

The President died at 2:15 *a. m., September 14.*

Drs. E. J. Janeway and W. W. Johnston, *who at the request* of Dr. Rixey had been summoned in *consultation, arrived too* late, but were present at the autopsy. Dr. McBurney also returned on Friday afternoon.

SIXTH URINALYSIS.

Color	amber, turbid, with phosphates
Quantity	252 cc.
Reaction	acid
Specific gravity	1.023
Albumin	mere trace, if any
Urea	0.047 gm. per 1 cc. urine
Indican	a trace
E. phosphates	increased
Chlorids	normal
Sulphates	a little high

Microscopic Examination.—Microscopic examination of sediment *obtained by* centrifuge, before and after clearing, shows no change from yesterday's sample. Casts, hyaline and granular, both large and small, comparatively few. Cylindroids, a few. Crystals, large amount *of uric acid,* some sodium urate, and in the untreated specimen a large amount *of amorphous* deposit, *principally of phosphates.* There are a few epithelial cells, small, granular. Occasional red cells and leucocytes.

REPORT ON THE AUTOPSY.[1]

BY

HARVEY B. GAYLORD, M.D.

Pathologist to the New York State Pathological Laboratory.

Ordinary signs of death: ecchymosis in dependent portions of the body. Rigor mortis well marked. Upon the surface of the chest, to the right of the midsternal line, *a spot 1 cm. in diameter,* dark-red in color, with a *slight crust formation covering it, 5.5 cm.* from the suprasternal notch; from the *right nipple, 10 cm.; from* the line of the right nipple, *8.25 cm.* Surrounding this spot, at which point there is an evident *dissolution of the continuity* of the skin, is a discolored *area of oval shape* extending upward and to the right. In its greatest length it is 11 cm.; and in its *greatest width, 6 cm.* It extends upward in the direction of the *right shoulder. The skin* within this area is discolored, greenish-yellow and mottled.

The surface of the abdomen is covered *with a surgical dressing,* which extends down to the umbilicus and upward to just below *the nipples. The* innermost layer of cotton is *covered or stained* with *balsam of* Peru and blood. On removing this dressing, a wound, parallel to, and somewhat to the left of, *the median line,* is exposed, inserted in which are two layers of gauze, likewise impregnated with *balsam of* Peru. The wound is 14.5 cm. in length, and is open down to the abdominal muscles. The layer of abdominal fat is 3.75 cm. in thickness. The *appearance of the fat is good,* a bright yellow in color. No evidence of necrosis or sloughing. In the left margin of the surgical wound, lying 1 cm. *to the right of a line* drawn from the umbilicus to the left nipple, *15.5 cm.* from the nipple and 16.5 cm. from the umbilicus is a partly healed indentation of the skin, and an excavation of the fat immediately beneath it (this is the site of the entry of the bullet), extending down to the peritoneal surface. On making the median incision, starting from the suprasternal notch and extending to a point just below the symphysis, the subcutaneous fat is exposed, which is of bright yellow color and normal appearance except in an area which corresponds superficially to the area of discoloration described as surrounding the wound upon the chest wall. This area marks the site of a hemorrhage into the subcutaneous fat. The remainder of the subcutaneous fat is firm, and measures 4.75 cm. in thickness on the abdominal wall. On opening the sheath of the right rectus muscle, it is seen to be of dark-red color. (Culture taken from ecchymotic tissue under the upper bullet hole and from between the folds of the small intestine. Three tubes from each locality on agar and gelatin.)

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[1] The autopsy was performed by Drs. Gaylord and Matzinger.

On opening the abdominal cavity, the parietal surface of the peritoneum is exposed, and is found to be covered with a slight amount of bloody fluid; is perfectly smooth and not injected. The great omentum extends downward to a point midway between the umbilicus and the symphysis. It is thick, firm; its inferior border is discolored by coming in contact with the intestines. Below the umbilicus a few folds of intestines are exposed. These are likewise covered with discolored blood, after the removal of which the peritoneal surface is found to be shiny. On the inner aspect of the abdominal wound the omentum is found to be slightly adherent to the parietal peritoneum, and can be readily separated with the hand from the edge of the wound. At this point the omentum is somewhat injected. This adhesion to the omentum is found to extend entirely around the abdominal wound. The parietal peritoneum immediately adjacent to the inner aspect of the abdominal wound is ecchymotic.

On removing the subcutaneous fat and muscles from the thoracic wall, the point which marks the dissolution of continuity of the skin upon the surface, is found to lie directly over the margin of the sternum and to the right side between the second and third ribs. There is no evidence of ecchymosis or injury to the tissues or muscles beneath the subcutaneous fat. On making an incision through the subcutaneous fat, directly through the wound upon the chest, a small cavity is exposed about the size of a pea just beneath the skin which is filled with fluid blood. The subcutaneous tissue underlying the area of discoloration on the surface of the chest wall shows hemorrhagic infiltration.

On removing the sternum, the lungs are exposed, and do not extend far forward. A large amount of pericardial fat is exposed. Pleural surface on both sides is smooth. There are no adhesions on either side within the pleural cavities. The diaphragm on the right side extends upward to a point opposite the third rib in the mammary line. No perceptible amount of fluid in either pleural cavity. On opening the pericardial cavity, the surface of the pericardium is found to be smooth and pale. The pericardium contains approximately 6 cc. of straw-colored, slightly turbid fluid. (Some taken for examination.)

On exposing the heart, it is found covered with a well-developed panniculus. The heart measures, from the base to the apex, on the superficial aspect, 10.5 cm. The right ventricle is apparently empty. The heart feels soft and flaccid. On opening the left ventricle, a small amount of dark-red blood is found. The muscle of the left ventricular wall is 1.5 cm. in thickness; dark reddish-brown in color; presents a shiny surface. The average thickness of the pericardial fat is 3.5 mm. (Cultures made from the auricle.) The left auricle contains but a small amount of dark currant-colored blood. The mitral valve admits 3 fingers. The right ventricle, when incised in the anterior line, is found to be extremely soft: the muscular structure is 2 mm. in thickness. The panniculus measures 7 mm. The muscle is dark red in color; very shiny, and the pericardial fat invades the muscular wall at many points.

On opening the right auricle it is found to be filled and distended by a large currant-colored clot, which extends into the vessels. The tricuspid orifice admits readily three fingers. The coronary arteries are patulous and soft; no evidence of thickening.

Lungs are gray color, and contain a moderate amount of coal-dust pigment. Slight amount of frothy fluid escapes from the bronchi; but the pulmonary tissue is crepitant and free from exudate.

On unfolding the folds of intestine, there is no evidence of adhesion until a point just beneath the mesocolon is reached, when, on removing a fold of small intestine, a few spoonfuls of greenish-gray thick fluid flows into the peritoneal cavity.

On the anterior gastric wall is an area to which a fold of the gastrocolic omentum is lightly adherent. On breaking the adhesion there is found a wound about midway between the gastric orifices, 3.5 cm. in length, parallel with the greater curvature of the stomach, 1.5 cm. from the line of omental attachment. This wound is held intact by silk sutures. There is no evidence of adhesion at any other point on the anterior wall. The gastric wall surrounding the wound just mentioned for a distance of 2 cm. to 3 cm. is discolored, dark greenish-gray in appearance, and easily torn. On exposing the posterior wall of the stomach from above, along its greater curvature, the omentum is found to be slightly adherent, a line of silk ligatures along the greater curvature of the stomach marking the site where the omentum had been removed. On throwing the omentum downward, the posterior gastric wall is exposed. On the posterior wall, a distance of 2 cm. from the line of omental attachment, is a wound approximately 2 cm. long, held intact by silk sutures. The gastric wall surrounding this wound is discolored. On the surface of the mesocolon, which is posterior to the gastric wall at this point, is a corresponding area of discoloration, the portion coming directly in contact with the wound in the gastric wall being of dull gray color. The remainder of the surface of the posterior wall of the stomach is smooth and shiny. Beyond the surgical wound in the posterior wall of the stomach is found an opening in the retroperitoneal fat, large enough to admit 2 fingers. This opening communicates with a track which extends downward and backward as far as the finger can reach. The tissues surrounding this track are necrotic. On removing the descending portion of the colon, a large irregular cavity is exposed, the walls of which are covered with gray, slimy material, and in which are found fragments of necrotic tissue. Just at the superior margin of the kidney is located a definite opening which forms the bottom of the track traced from the stomach. On stripping the left kidney from its capsule, it is found that the superior portion of the capsule is continuous with the cavity. The weight of the left kidney is 141.82 grams. The kidney is readily stripped from its capsule: is dark red; the stellate veins are prominent, and along its greater curvature are numerous dark red depressions. On the superior aspect of the kidney is a protrusion of the cortex, dark red in color, and in this protrusion is a laceration 2 cm. long, extending across the superior border, approximately at right angles to the periphery of the kidney and from before backward. On incising the kidney, the cortex and medulla are not easily distinguishable from one another; both are of rose-red color, the cortex measuring approximately 6 mm. in thickness. The vessels in the pyramids of Ferrein are very prominent. Beneath the protruding portion of the surface, the cortex is dark red in color. This discoloration extends downward in pyramidal form into the medulla. The laceration of the surface marks the apex of the protrusion of the kidney substance. Between the spleen and the superior aspect of the kidney is a necrotic tract which extends down and backward, and ends in a blind pocket. The tract which included the superior aspect of the kidney can be traced into the perinephritic fat to a point just above the surface of the muscles of the back.

The necrotic cavity which connects the wound on the posterior wall of the stomach and the opening adjacent to the kidney capsule is walled off by the mesocolon, and is found to involve an area of the pancreas, approximately 45 mm. in diameter and extending about half through the organ. This organ at its center forms part of the necrotic cavity. Through its body are found numerous minute hemorrhages and areas of gray softening, the size of a pea or smaller. These are less frequent in the head portion of the pancreas.

A careful examination of the track leading down toward the dorsal muscles fails to reveal the presence of any foreign body. After passing into the fat, the direct character of the track ceases; and its direction can be traced no further. The adjoining fat and the muscles of the back were carefully palpated and incised, without disclosing a wound or the presence of a foreign body. The diaphragm was carefully dissected away, and the posterior portion of the thoracic wall likewise carefully examined. All fat and organs which were removed, including the intestine, were likewise examined and palpated, without result.

The great amount of fat in the abdominal cavity and surrounding the kidney rendered the search extremely difficult.

The right kidney is imbedded in a dense mass of fat; capsule strips freely; it weighs 141.75 grams; measures 11.5 cm.; substance is soft; cortex is 6 mm. in thickness; rose-red in color: cut surface slightly dulled. There are a few depressions of the surface, and the stellate veins are prominent.

The liver is dark-red in color; the gall-bladder distended. The organ was not removed.

The autopsy continued for a longer period than was anticipated by those who had charge of the President's body, and we were requested to desist seeking for the bullet and terminate the autopsy. As we were satisfied that nothing could be gained by locating the bullet, which had apparently set up no reaction, search for it was discontinued.

Anatomic Diagnosis.—Gunshot wound of both walls of the stomach and the superior aspect of the left kidney; extensive necrosis of the substance of the pancreas; necrosis of the gastric wall in the neighborhood of both wounds; fatty degeneration, infiltration and brown atrophy of the heart muscle; slight cloudy swelling of the epithelium of the kidneys.

A matter of no inconsiderable embarrassment to us arose in the objection to our removing sufficient portions of the tissues for examination. We were able to secure only 2 small fragments of the stomach wall; tissue from around the wound upon the chest wall; a portion of fat from the wall of the necrotic cavity: a small piece of each kidney, that of the left kidney including the portion involved by the original wound; and pieces of heart-muscle from the right and left ventricles. The microscopic examination of these tissues follows:

The piece of retroperitoneal fat, where it forms part of the necrotic cavity, is seen on section to be covered with a thick gray deposit, which has an average thickness of from 4 mm. to 6 mm. Beneath this, and separating it from the fat, is a well-defined area of hemorrhage from 1 mm. to 2 mm. in thickness. The appearance of this piece of tissue is characteristic of the fat tissue surrounding the entire cavity. A section made perpendicular to the surface and stained with hematoxylin-eosin, shows the following characteristics: Under low power there is no evidence of round-celled infiltration between the fat cells, or of fat necroses. The surface of the tissue which, in the microscopic specimen was covered by a layer of grayish material, proves, under low power to consist of a partly organized fibrinous deposit. At the base of this deposit is evidence of an extensive hemorrhage, marked by deposits of pigment. The surface of the membrane is of rough and irregular appearance, and contains a large number of round cells with deeply stained nuclei. Under high power the organization of the membrane may be traced from the base toward the surface. The portion immediately adjacent to the fat tissue consists of a network of fibrin enclosing large numbers of partly preserved red blood corpuscles. In many areas the red blood corpuscles are broken down and extensive deposits of pigment are found. Extending into the fibrin structure of the membrane are numerous typical fibroblasts and round cells. In some regions pigment is evidently deposited in the bodies of large branching and spindle cells. Here and there, included in the membrane, are the remains of fat cells, and toward the surface of the membrane a large number of round cells scattered through the interstices of the membrane. There are but few polymorphonuclear leucocytes. Here and there in the membrane are fragments of isolated fibrous connective tissue with irregular contours and an appearance suggesting that they are fragments of tissue which have been displaced by violence and included in the fibrin deposit. The fibrin in the superficial layers of the membrane is formed in hyaline clumps. The organization along the base of the deposit is comparatively uniform.

Sections stained with methylene blue, carbol-thionin and Gram's method were carefully examined for the presence of bacteria, with negative results. Even upon the surface of the membrane there are no evidences of bacteria.

The section of the left kidney including the triangular area of hemorrhage described in the macroscopic specimen, reveals the following appearances. (Section hardened in formalin, stained with hematoxylin-eosin.) Examined macroscopically, section represents a portion of a kidney cortex made perpendicular to the surface of the cortex, and including an area of hemorrhage into the substance of the cortex 1 cm. in length measured from the capsular surface downward, and presenting a width of from 5 mm. to 6 mm. The capsular surface has apparently been torn.

Under low power the margins of the preparation are found to consist of well-preserved kidney structure. There is a slight amount of thickening of the interstitial tissue, and occasional groups of tubules are affected by beginning cloudy swelling. The glomeruli are large and present a perfectly normal appearance. As we approach toward the center of the preparation, occasional glomeruli are met with in which the capillary loops are engorged and the adjacent tubules contain red blood-corpuscles. A short distance further, the kidney structure becomes entirely necrotic. Here and there the remains of tubules may be made out, and these are infiltrated with cells. The necrotic area presents a rough, net-like structure. As we approach toward the surface of the kidney, we find that the necrosis becomes more marked. There is the merest suggestion of kidney structure, its place being taken by disintegrated red blood-cells and leucocytes, embedded in a well-defined fibrinous network. There is great distortion of the kidney structure about the periphery of the necrotic area. In this region a considerable amount of pigment is also found in the necrotic tissues.

Under high power, the characteristics of the necrotic tissues may be better observed. The kidney structure is broken up and torn into irregular fragments, infiltrated by red blood corpuscles and leucocytes. In the portion of the necrotic mass beneath the capsule, the kidney structure is practically obliterated and is replaced by a network of fibrin, which includes large numbers of red blood-cells and leucocytes. Scattered through the entire necrotic area are frequent deposits of pigment. In the deeper portions of the necrotic area, the margins of the fibrin deposit are invaded by fibroblasts from the connective tissue structure of the kidney. The organization in these areas is, however, slight.

Sections stained with methylene-blue and Gram's method and carefully examined under oil immersion, fail to reveal the presence of any organisms. In preparations stained with methylene blue, the deposits of pigment may be readily observed. Section of the same tissue hardened in Hermann's solution and examined for fat, shows the presence of numerous fat droplets within the epithelium of the tubules which are adjacent to the area of necrosis. In the portions of the preparation more widely distant from the area of necrosis, no fat is present.

Section of the right kidney hardened in formalin and stained with hematoxylin-eosin, reveals the presence of areas in which slight parenchymatous degeneration of the epithelium in the uriniferous tubules may be noted. These areas are not extensive, and are confined to single groups of tubules. The interstitial connective tissue of the organ seems to be slightly increased in amount, but there is no well-defined round-celled infiltration. An occasional hyaline glomerulus is to be met with in these cases surrounded by increased connective tissue. The epithelium of the kidney tubules, aside from those in which the parenchymatous degeneration is present, is well preserved. The nuclei are well stained; protoplasm, finely granular.

A fragment of the stomach wall taken from the immediate neighborhood of the anterior wound is in a condition of complete necrosis. The nuclei of the cells are scarcely demonstrable. The epithelial surface is recognized with difficulty. At its base are apparently a few round cells. Examination of the blood-vessels reveals nothing characteristic. There is apparently no evidence of thrombosis. A section made through the gastric wall at some distance from the wound, reveals the well-preserved muscular structure of the gastric wall, which presents no characteristic alterations. Superficial portions of the epithelium have apparently been affected by postmortem digestion. However, in one portion of the preparation, the epithelium is intact, and shows distinct evidence of marked round-celled infiltration between the glandular structures. The blood vessels contained blood-corpuscles with the usual number of leucocytes.

The fragments of heart-muscle which were removed from the right and left ventricular walls, were examined in the fresh state, and exhibited a well-defined fatty degeneration of the muscle fibers, and in the case of the right ventricular wall, an extensive infiltration between the muscle fibers, of fat, was apparent. Sections from these fragments of muscle hardened in Hermann's solution, are taken for examination. A fragment of muscle from the right ventricular wall was removed at a point where the fat penetrated deeply into the muscular structure, the ventricular wall at this point showing an average thickness of 2.5 mm. Under low power, the muscle fibers are separated into bundles by masses and rows of deeply stained fat cells. The muscle fibers are seen to contain groups of dark brown granules lying in the long axes of the cells. Under high power, these are resolved into extensive groups of dark brown pigment arranged around the nuclei. The muscle fibers are slender, the cross and longitudinal striation is well-defined. Examined near the margin of the preparation, where the osmic-acid fixation has been successful, all of the muscle fibers are found to contain minute black spherical bodies, extending diffusely through all the muscle fibers about the entire margin of the preparation. These fine fat droplets are present in sufficient amount to speak of an extensive diffuse fatty degeneration of the muscle fibers. Where the large fat cells have separated the muscle fibers, these are found to be more atrophic than those in the central portions of the larger bundles.

The examination of the section through the healed bullet wound on the chest walls reveals nothing of importance. The dissolution of continuity is filled in by granulation-tissue, and there is evidence of beginning restoration of the epithelium from the margins. Stains for bacteria give negative results.

In summing up the macroscopic and microscopic findings of the autopsy, the following may be stated: The original injuries to the stomach-wall had been repaired by suture, and this repair seems to have been effective. The stitches were in place, and the openings in the stomach-wall effectually closed. Firm adhesions were formed both upon the anterior and posterior walls of the stomach, which reinforced these sutures. The necroses surrounding the wounds in the stomach do not seem to be the result of any well-defined cause. It is highly probable that they were practically terminal in their nature, and that the condition developed as a result of lowered vitality. In this connection there is no evidence to indicate that the removal of the omentum from the greater curvature and the close proximity of both of these wounds to this point, had any effect in bringing about the necrosis of the gastric wall, although circulatory disturbances may have been a factor. The fact that the necrotic tissue had not been affected by digestion strongly indicates that the necrosis was developed but shortly before death. The excavation in the fat behind the stomach must be largely attributed to the action of the missile. This may have been the result of unusual rotation of a nearly-spent ball, or the result of simple concussion from the ball passing into a mass of soft tissues. Such effects are not unknown. The fact that the ball grazed the superior aspect of the left kidney, shown by the microscopic investigation of that organ, indicates the direction of the missile, which passed in a line from the inferior border of the stomach to the tract in the fat immediately superior to the kidney. There was evidence that the left adrenal gland was injured.

The injury to the pancreas must be attributed to indirect, rather than direct, action of the missile. The fact that the wall of the cavity is lined by fibrin, well advanced in organization, indicates that the injury to the tissues was produced at the time of the shooting. The absence of bacteria from the tissues indicates that the wound was not infected at the time of the shooting, and that the closure of the posterior gastric wound was effectual. The necrosis of the pancreas seems to us of great importance. The fact that there were no fat necroses in the neighborhood of this organ indicates that there was no leakage of pancreatic fluid into the surrounding tissues. It is possible that there was a leakage of pancreatic fluid into the cavity behind the stomach, as the contents of this cavity consisted of a thick, grayish fluid, containing fragments of connective tissue. In this case the wall of fibrin would have been sufficient to prevent the pancreatic fluid from coming in contact with the adjacent fat. The extensive necrosis of the pancreas would seem to be an important factor in the cause of death, although it has never been definitely shown how much destruction of this organ is necessary to produce death. There are experiments upon animals upon record, in which the animals seem to have died as a result of not very extensive lesions of this organ. One experiment of this nature reported by Flexner (*Journal of Experimental Medicine*, Vol. II) is of interest. The fact that concussion and slight injuries of the pancreas may be a factor in the development of necrosis, is indicated by the researches of Chiari (*Zeitschrift fuer Heilkunde*, Vol. xvii, 1896, and *Prager Med. Wochenschr.*, 1900, No. 14), who has observed (although a comparatively rare condition) extensive areas of softening and necrosis of the pancreas, especially of the posterior central portion which lies directly over the bodies of the vertebræ, where the organ is most exposed to pressure or the effects of concussion. The wound in the kidney is of slight importance, except as indicating the direction taken by the missile. The changes in the heart, as shown by the macroscopic inspection and the microscopic examination, indicate that the condition of this organ was an important factor. The extensive brown atrophy and diffuse fatty degeneration of the muscle, but especially the extent to which the pericardial fat had invaded the atrophic muscle fibers of the right ventricular wall, sufficiently explain the rapid pulse and lack of response of this organ to stimulation during life.

REPORT ON THE BACTERIOLOGIC EXAMINATION.

BY

HERMAN G. MATZINGER, M.D.

Bacteriologist to the New York State Pathological Laboratory.

It is obvious that the short space of time which has elapsed since the death of the President has hardly been sufficient to prepare a complete and thorough bacteriologic report. This report contains all the observations which have been made up to this time:

On September 11, during the life of the President, cultures were made by Dr. Wasdin from the base of the abdominal wound and from dressings removed at the same time. These were submitted to me for examination, and showed the presence of the ordinary pus organisms: Staphylococcus pyogenes aureus and S. cereus albus, with a gas-forming bacillus which, in pure anaerobic culture on glucose gelatin, forms small, pearly, translucent colonies, with no liquefaction. In litmus milk it produces acid, but no coagulation. Morphologically, it is apparently a capsulated, short bacillus, which takes stains poorly, and which does not stain by Gram's method. Inoculated into the ear vein of a rabbit, which was killed immediately afterward, it produced, after 24 hours in the body of the rabbit, a marked accumulation of gas in the organs, and again grew out in pure culture. As yet the organism is not fully identified.

None of these cultures showed streptococci. A bacterium which appears to be one of the proteus group was, however, isolated, which does not stain by Gram, and appears in varying forms, sometimes small oval, and again quite rod shaped and in short chains. Sometimes it is surrounded with a slimy covering, which remains clear like a capsule when the organism is stained. On slanting agar, it produces a whitish, slimy growth, which gradually runs to the bottom of the slant and produces an odor of decomposition. On gelatin, it grows very slowly with slight and slow indication of liquefacton. In litmus milk, it produces acid and rapid coagulation.

At the time of the autopsy, September 14, inoculations were made by myself. From the base of the wound, there was again obtained a number of pus organisms, principally a white staphylococcus and the bacterium described above, but no streptococci. Cultures made from the peritoneal surface of the intestines were entirely negative. Cultures made from the under surface of the omentum near the colon, were entirely negative, both with and without oxygen. Cultures from the blood of the right auricle were likewise negative. A very careful and extensive search for micro-organism in the contents of the necrotic cavity, behind the stomach, reveals nothing but a short stumpy bacterium, which, as far as the work has been carried at present, appears to belong to the proteus group, *and is very like* Proteus hominis capsulatus, described by Bordoni and Uffreduzzi.

Morphologically, it is not uniform, and sometimes appears almost encapsulated, being surrounded by material that does not stain; is quite refractory to Gram, and produces an odor of decomposition as it grows. It does not liquefy gelatin rapidly and grows slowly, as a glistening white elevated surface growth which slowly sinks; but on agar in the thermostat it grows very rapidly, as a moist, grayish-white, translucent mass. Colonies on gelatin plates have a clean circumference, are granular and quite refractive. In litmus milk it produces acid and rapid coagulation. Animal experiments are still incomplete and can not be published at this time.

It must be stated that there is occasion for suspecting that this may be a contamination, either from the outer wound or elsewhere, because, quite unavoidably, the technique of obtaining the material and cultures from the necrotic cavity was not absolutely correct.

Cultures made from the small area of broken-down tissue under the chest wound at the time of the autopsy, grew what appears to be staphylococcus epidermidis albus, described by Dr. Welch.

The slimy, gray, necrotic material from the cavity above the transverse mesocolon behind the stomach, was carefully examined microscopically, with the result that very few micro-organisms were found in the fresh state, and no recognizable tissue elements of any kind, no leucocytes or pus-corpuscles, but an abundance of crystals which appeared more like fatty acid than fat crystals. It contained no free hydrochloric acid, and was alkaline in reaction. Experiments as to its digestive power were negative. About 2 cc. of this material were injected into the space behind the stomach of a dog (still living), with no result except quite an elevated temperature for 3 or 4 days. Other animal experiments are also still incomplete.

It might be well to state here that the bacteriologic examination of the chambers and barrel of the weapon used, as well as the empty shells and cartridges, ordered by the District Attorney, was entirely negative, except that from a loaded cartridge there was grown an ordinary staphylococcus and a mould. The chemical examination of the balance of the loaded cartridges, made by Dr. Hill, chemist, was also negative.

The absence of known pathogenic bacteria, particularly in the necrotic cavity, warrants the conclusion that bacterial infection was not a factor in the production of the conditions found at the autopsy.

This report has received the approval of the consulting staff of the late President, and is issued with our consent.

P. M. Rixey.
Matthew D. Mann.
Herman Mynter.
Roswell Park.
Eugene Wasdin.
Charles McBurney.
Charles G. Stockton.

Clinical Report.

TRACHEOTOMY IN BREECH PRESENTATION.

AN OLD OPERATION BUT A NEW APPLICATION.

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Demonstrator of Operative Obstetrics, Northwestern University Medical School; Assistant Obstetrician to Provident Hospital.
CHICAGO.

Mrs. E. M. C., German, aged 31, was taken in labor with her second child at 12:30 p. m., Sept. 1, 1901. I was summoned at 10 o'clock on the evening of the same day. Upon my arrival at the house, I found a nervous and delicate woman in the second stage of labor. I diagnosed a breech presentation, S. D. A.; the breech being high up and not engaged. The membranes had ruptured early, and the birth canal was poorly prepared for fetal passage. The fetal heart tones were regular, but numbered 160 beats per minute. The fetus was unusually active. The pains were weak and of short duration. By reason of the danger of fetal asphyxia, I proceeded to extract.

It was impossible to bring down a foot, but I succeeded in placing a finger in the anterior groin and made pressure downward and backward in the usual manner until the posterior groin was within reach. After this point, the first act of extraction was easy and was quickly completed. No further difficulty was experienced until after the arms had been delivered. The head had become fixed in the transverse diameter of the inlet and remained so in spite of the Smellie-Veit's, or, more correctly speaking, the Mauriceau method combined with strong suprapubic pressure in the Walcher posture. After working a short time, however, the head was felt to descend slightly into the pelvis, while the occiput partially rotated anteriorly, but successful extraction of a living child seemed impossible at the time.

Convinced, therefore, that the child's life was practically lost, the writer decided to perform tracheotomy as an experimental operation. The body of the child was lifted up by an assistant, the neck hastily washed with a one-half per cent. lysol solution, and the field of operation rendered as aseptic as the limited amount of time would permit. The perineum was pressed backward and the larynx was then steadied with a tenaculum and a linear incision made through the cricoid cartilage, and two or three rings of the trachea. The thick, venous blood which escaped from the incision gave positive evidence of the grave state of asphyxia present. The tissues were then retracted and a soft rubber, aseptic, tracheal catheter was introduced far enough to snugly fit the trachea and pure air gently forced into the lungs by an air-bag. The lungs immediately expanded and the chest was then compressed by the hands. These movements, alternating, were continued until the respiratory rhythm was voluntarily inaugurated and maintained and the body became pink in color. The hemorrhage now ceased and forceps were applied to the after-coming head; stationary, intermittent tractions were made and every effort taken to preserve the perineum as far as possible. In fourteen and one-half minutes after the delivery of the arms, the head was extracted and the child born without any sign of the asphyxia which was so threatening a short time before. The child's body was wrapped in a warm, moist towel to prevent premature respiration during extraction.

The cord was left uncut until the funic circulation ceased and the loss of blood from the neck was in a measure compensated for. The mouth and throat were cleansed and the blood in the trachea carefully removed. Respiration took place through the laryngeal opening only. The child uttered a few weak cries when slapped, but otherwise appeared healthy. A stitch was taken on each side of the incision and the long end of the threads tied behind the neck. This kept the incision patulous and allowed free access of air when the catheter was withdrawn.

Five hours later, there being no dyspnea when the wound edges were coaptated, sutures of fine catgut were introduced and tied, and thus normal respiration was established for the first time. The wound healed by first intention and the child made an excellent recovery. The temperature was at no time over 102 F. The mother recovered with an intact perineum.

The fetal measurements were as follows: Diameter, bitemporal, 8 cm.; biparietal, 8.5 cm.; suboccipital-bregmatic, 9.5 cm.; occipital-frontal, 11 cm.; occipito-mental, 12 cm.; bis-acromial, 10.5 cm.; bis-iliac, 8.5 cm. The cephalic bones were hard and ossified; the fontanelles small; the sutures closed.

The mother's diameters were: Interspinous, 25 cm.; intercristous, 27.5 cm.; Baudelocque, 18 cm.; bitrochanteric, 31 cm.; circumference, 92 cm.; conjugata vera, 9 cm.

It has long been an established rule in obstetric practice to extract the fetal head as quickly as possible in head last cases. The fetus at this stage of the operation is deprived of its supply of oxygen by the cord being caught between the head and the maternal pelvis, or, as is claimed by some writers, a partial separation of the placenta from the uterine wall. The amount of oxygen already in the body is only sufficient to retain fetal life for four or five minutes, although cases are recorded where children have been resuscitated after fifteen minutes of delay. These cases, however, are exceptional, and their accuracy is sometimes questioned. Time is the greatest element in the safe delivery of the fetus after the cord has come into view. If the head is not delivered within four to six minutes after the extraction of the arms the child will probably be still-born or else deeply asphyxiated.

Attempts have been made to prevent asphyxia by supplying the child with oxygen artificially during extraction. Pugh recommended the method of passing two fingers into the mouth and allowing air to enter along the hollow of the hand. Weidmann conveyed air to the mouth by means of a catheter or a special tube prepared for the purpose called the "vectis aerophorus." When the head is low in the pelvis, the perineum can frequently be pushed behind the mouth and air admitted to the oral cavity directly. Where, however, the mouth is beyond the reach of the fingers and the catheter becomes useless on account of the difficulty of entering the mouth and the inevitable kink at the bend of the tube, the only chance of saving the child's life has, heretofore, been in a rapid forceps operation with a large fetal mortality resulting. Should the forceps operation prove negative, the child immediately dies, or craniotomy, with a mortality of 100 per cent., follows. Should the forceps deliver the child, it is deeply asphyxiated and frequently, because of premature respiratory efforts, becomes a victim of aspiration pneumonia.

In a given case where the estimated diameters of the fetal head and the determined diameters of the pelvis are such that the accoucheur may expect cephalic impaction; where the usual methods by hand and position have proven fruitless the operation of tracheotomy as described above is recommended. When the child's body is raised to a perpendicular plane, the blood and mucus are prevented from clogging up the bronchi. In a majority of the cases the proximal end of the trachea will be found free of obstruction as the mucus collects principally in the pharynx and upper larynx. The use of an air-bag, such as the Politzer inflation bag, is preferable to blowing in air from the lungs, as expired air is always deficient in oxygen. If one were able to introduce nearly pure oxygen gas, the child would stand the best chance for recovery. The body should be enveloped by a warm, moist towel, to reduce to a minimum the difference between the internal and external atmospheres.

If the labor has been conducted according to established rules of asepsis and antisepsis, little or no time need be lost in cleansing the neck as the fetus is already sterile unless infected from external sources.

With the imminent danger of asphyxia forestalled, the forceps may be applied to the after-coming head and traction be slowly made, giving time for the head to mold and adapt itself to the pelvic canal as well as protecting the perineum as far as possible. This method is to be preferred to the common one of applying forceps, extracting hastily and in 28 to 30 per cent. of cases delivering a dead child, besides in many cases lacerating the perineum. Should the perineum be found to overlap the neck to a moderate extent, an episiotomy may be done immediately, and the tissues retracted sufficiently to expose the field of operation.

The after-treatment is carried out in the usual manner. The obstruction to respiration being removed at birth, the tracheotomy wound may be closed in a few hours.

4433 Lake Avenue.

Diet in Nephritis.—A nephritic must be well nourished, and the old theories of the harmfulness of this or that food are not sustained by actual experience. It may even prove possible that creatin and similar substances may be directly beneficial, on the same principle as we treat heart diseases with heart poisons. O. Reichel publishes in the *Cbl. f. d. Ges. Ther.*, January, a study of the subject, concluding that the nephritic patient should not be restricted in diet, but should be allowed to eat whatever he best digests and assimilates, without regard to theory. He urges closer study of the mild, ambulant cases of albuminuria, partial nephritis and post-nephritic inflammation of the kidneys—regarding them all as actual nephritis and better suited than severer cases for research on the effect of diet on the progress or retrogression of the morbid processes. He also denounces sweat baths as another purely theoretical measure, which in reality fails to accomplish the anticipated results. He has never known a nephritic to be benefited by them in his experience. He attributes the symptoms in nephritis to a toxin in the blood, retained by the insufficiency of the kidneys, and causing the edema and hypertrophy of the heart by the changes it induces in the kidneys, which diminish their power of resorption. Insufficient absorption is a factor in the delay in the test-elimination of methylene blue, as well as the insufficiency of the kidneys. The changes in the walls of the vessels cause increased resistance, and, secondarily, increased blood pressure with consequent hypertrophy of the heart.

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RUDOLPH VIRCHOW.

Professor Rudolph Ludwig Karl Virchow, the distinguished German pathologist, anthropologist and politician, completed his eightieth year on Sunday, October 13, 1901. The event was celebrated in Berlin and in most of the medical centers of the world on Saturday, October 12.

Virchow was born in Schivelbein, a small town in Pomerania, in 1821. He was educated at the Gymnasium in Berlin, and graduated in medicine at the University in that city in 1843. After graduation he undertook the study of pathology and soon became assistant to Froriep and prosector at the Charité. With his friend Reinhardt, he founded in 1847 the *Archiv*, which has become the most important medical periodical in the world and ever since has borne his name. Compelled in 1849, on account of his democratic tendencies, to give up his position and residence in Berlin, Virchow removed to Würzburg, where he continued active work in pathological anatomy, supported the Physikalische-Medicinische Gesellschaft, and made for himself such a name that the faculty and government in Berlin recalled him in 1856 to the Chair of Pathological Anatomy. A new pathological institute was established for him, and he has remained director of this institute and professor of the University ever since.

To understand Virchow's immense influence upon the progress of medicine it is only necessary to compare the conditions of the science before 1850 with those which exist to-day and to recall briefly the various researches undertaken by Virchow during the intervening period. Before the time of Virchow's work, accurate autopsy reports were scarcely known. Clinical histories of patients were reported from memory rather than from notes taken at the time of the examinations, and even when clinical records were made they referred only to the pulse and to a few of the more striking symptoms. Nearly all medical articles were made to conform to some abstract theory, or were arranged according to some one of the "systems" so much in vogue in the eighteenth and the first half of the nineteenth centuries. In the program laid down in the first volume of the *Archiv* (1847), Virchow declared that the time had come for the detailed study of individual cases, pathological and clinical. Only after the accumulation of such data did he believe that it would be possible to construct a true theory of disease—a pathological physiology of real value. General laws were to be arrived at from below rather than from above; hypotheses were to succeed rather than precede the establishment of such general laws; thenceforward the inductive, not the deductive method, was to be the dominant one in medicine. It was necessary, he declared, that in the study of medicine we get at least three hundred times nearer than in the past to the natural processes.

The enemies of the new movement declared that Virchow was not practical; that his ideas were dangerous, and that he and his comrades were doctrinaires and adventurers. The fight started by the *Archiv* against the prevalent mixture of voluntary rationalism and gross empiricism proved, however, rapidly successful, and the introduction by Virchow of the genetic principle of investigation did much to turn pathological studies in an entirely new direction.

Among pathologists Virchow, though revered for his special researches on pyemia, leukemia, thrombosis and embolism, is perhaps best known as the founder of the so-called "cellular pathology." In his now long-famous volume (Die Cellularpathologie in ihrer Begründung auf physiologischer und pathologischer Gewebelehre, Berlin, 1858) he led back pathological processes in greater completeness than had ever been attempted before, to alterations in the elementary constituents of the body—the cells. His great work on tumors (Die Kranhaften Geschwülste, Berlin. 1863-67) remains to-day the most valuable work on the subject for consultation. The technique introduced into the autopsy-room by Virchow and his published account of it became the standard for postmortem work all over the world.

In anthropology and ethnography Virchow is as well and favorably known as in pathology. His investigations of race characteristics, his measurements of skulls and other contributions in the fields are epoch-marking.

Virchow's fame quickly spread beyond his own country; students of higher medicine flocked to him from all parts of the world, and he speedily became the head of the school of pathology known by his name. His power as a teacher has been unrivaled. He knew how to excite in his pupils the spirit of investigation.

No greater compliment has, perhaps, ever been paid to a scientific medical man than that made in honor of his seventieth birthday, when fifty-four of the most prominent medical scientists in the world contributed three large volumes of original research to his Festschrift. [Internationale Beiträge zur wissenschaftlichen Medicin. Festschrift. Rudolph Virchow, gewidmet zur Vollendung seines 70 Lebensjahres. 3 V. roy. 8°. Berlin, 1891]. His international reputation was no doubt largely due to his winning personality and literary power as well as to his investigative talent.

One of the most pleasing of the many praiseworthy features of Virchow's life is the humanitarian side of his work. Beginning with his investigations on famine fever among the poor inhabitants of Upper Silesia, in 1848, Virchow has always given largely of his energies and his interest to the promotion of the welfare of the masses. His contributions to the science of public hygiene are among the most notable of his works. Among them may be mentioned his articles on the drainage and sewage disposal of the city of Berlin, his various papers on military hygiene, on school hygiene, on the German household, and on disinfection. He made a special study of the best forms of exercise for the development of German youth. He has always been friendly to the higher education of women. For many years he has occupied a seat in the Reichstag and has taken a most active part in the government in connection with medical and veterinary affairs.

In his relations to life in general, as well as in practical politics, he has remained consistently a pronounced democrat. While a loyal German, he is a devotee of the cult of humanity. A citizen of the world, he does not belong to any one country.

Virchow has this year been especially honored by the Emperor of Germany and the King of Italy. The medical men of the civilized world have vied with one another in paying him homage. His life is an illustrious example of what a great man may accomplish by devoting his talents, time and energy to the scientific side of medicine. The results of his work and the remarkable personality of the man have made many others attempt to follow in his footsteps; a public need for workers in pathology has gradually developed until to-day pathology affords a career for many of the best men in our profession. Rich men are giving large sums of money toward medical research and the outlook for the future of pathology is bright. To none other of his age has it been vouchsafed to do more in the reshaping of medical thought and opinion than Rudolph Virchow.

CELLULAR PATHOLOGY IN THE PAST AND IN THE FUTURE.

It will not be amiss, at this time of celebrating the eightieth birthday of Virchow, to call attention to the fact that a new era in medicine began in the middle of the last century when the cellular structure of living organisms and of many pathological products became understood. The era was introduced by the demonstration of the cellular structure of plants by Schleiden, in 1838, and of animals by Schwann, in 1839. The rich fields of investigation thus thrown open for cultivation were soon appropriated by eager German investigators, and pre-eminently by the now so venerable Virchow and his numerous and enthusiastic pupils. Virchow may be said to have begun his work in 1840, and in a remarkably short time he not only made an end to the domination of medicine by the unfounded conceptions of the old humoral pathology, which had held sway for some two thousand years, but he also laid the foundations of a new pathology, the cellular pathology, upon the basis of which a mighty superstructure has been built. This was accomplished partly by destructive criticism of the old doctrines of dyscrasia, partly by showing that cellular proliferation never takes place from unorganized blastema, but only from pre-existing cells. The famous phrase of 1855, *"Omnis cellula e cellula,"* sounded the death-knell of the old humoral pathology and the birth of the new, cellular pathology.

As stated elsewhere, Virchow is the founder of pathological histology. He demonstrated that as all normal tissues consist of cells, so do cells play the essential part in pathological tissues and pathological products, and he traced the processes of disease to cells and to cell families. This is the kernel of the cellular pathology as it is developed in his celebrated lectures in Berlin in 1857 on "Die cellulare Pathologie in ihrer Begründung auf physiologischer und pathologischer Gewebelehre."

Of fundamental importance to the development of cellular pathology and of modern medicine as a whole is Virchow's masterly organization of the teaching and the investigation of pathological anatomy, which resulted in the establishment in Berlin and later in connection with all German universities of the pathological-anatomical institutes, or laboratories, which the whole medical world long ago has come to recognize as indispensably necessary for teaching and research in medical science. His official report setting forth the essential necessity and the scope of such establishments with the various subdivisions, such as the chemical laboratory, the pathological museum, although written in 1846, might well serve as a guide for many institutions in this country that now are beginning to plan in real earnest the foundation of medical departments upon a permanent basis commensurate with their importance. Fortunately this report is within easy reach as it is printed in Virchow's *Archiv,* 1900, clix, pp. 24-39. In this report Virchow can not sufficiently emphasize the weight that should be placed upon pathological physiology.

Under the leadership of cellular pathology many have thought—and probably with good reason—that the study of pathological histology has been carried too far. Because some of its followers seemed to think that they could reach the innermost secrets of disease by morphological methods, they did not hesitate to utilize histologic structure as the principle of classification and subdivision of pathological processes. This one-sided overestimation of the results of microscopic examination, valuable and important though they may be; the failure to recognize the greater importance of etiology, which is seen in some of the teachings of the Virchow school in regard to inflammation, e. g., the dualistic doctrine of tuberculosis; as well as the comparatively few directly valuable results in practical therapeutics, have tended to bring a measure of discredit upon cellular pathology. But this tendency to overestimate cellular pathology in the narrow sense is being counterbalanced by the brilliant discoveries in bacteriology and the great progress in the knowledge of the causes of disease of more recent times. Pasteur's demonstration that infectious diseases are caused by micro-organisms inaugurated a still newer era in medicine with developments of fundamental import for pathological anatomy and all other branches of medical science.

That the cellular hypothesis has helped greatly to elucidate the phenomena of life both under physiological and pathological conditions no one would gainsay, but it must not be forgotten that forms are inseparably connected with and dependent upon questions of force—"every form is force visible"—and cells are, as Huxley has it, not the cause but the results of organization and therefore not the only and ultimate object of biologic investigation. Virchow himself has said that the trained pathological anatomist can not deal with the product without searching for the mechanism through which it has resulted, and for the conditions under which the vital processes have suffered this or that deviation in their course. The essential significance of physico-chemical processes in biological phenomena is becoming daily more manifest. The study of the forces that lie behind structure and form—the rôle in physiological and pathological processes of molecules and ions, of enzymes, of osmotic pressure, of chemical equilibrium, and other factors—is about to erect a molecular pathology by the side if not in the place of the cellular pathology that now so largely governs our conceptions of disease. Indeed, it is along physico-chemical lines that we must look for the explanation of many phenomena, normal and abnormal, phenomena the existence of which may be made known but not explained by morphologic methods. And it is probably in this field that the present century will bring its farthest reaching achievements in physiology and pathology.

OFFICIAL REPORT ON PRESIDENT M'KINLEY'S CASE.

We publish this week the official report on President McKinley's case, signed by all the attending physicians and surgeons. It is very complete even to minor details, and a careful reading must convince the most critical that the case from the beginning was well managed and that no adverse, retrospective criticism is possible. The report shows that the charges as to poor judgment used in the administration of solid food, in failure to find the bullet both during the original operation and at the autopsy, in the non-use of the *x*-ray and of drainage, can not be sustained. The main interest of the report centers in that which pertains to the autopsy and the examination and deductions therefrom. This part of the report is the important part of the document, as it is bound to excite interest not only because of its disclosures, but as well because of what it fails to disclose.

In the case of the wounds of the stomach effective closure had been secured by means of stitches which had become re-enforced by adhesions both anteriorly and posteriorly. Both wounds were found surrounded by areas of discolored and softened tissue which had lost its microscopic structure. The cause of this change is not at all evident. In his summary the pathologist suggests its terminal nature and the cause as lowered vitality. It appears hardly necessary to offer an explanation of so general character as "lowered vitality."

There seems to be no essential reason why these changes may not have resulted from the action of the gastric juice and that they were of the nature of postmortem digestion. The area of discoloration on the surface of the mesocolon which came directly in contact with the wound on the posterior gastric wall was of a dull gray color, indicating a diffusion into it of the same substance or substances as may have caused the discoloration and softening in the tissues about the wounds in the stomach. There is no statement in the report of the condition of the interior of the stomach; it is not mentioned whether or not the stomach was opened; and it is unfortunate that opportunity was not given to freely examine the areas about the wounds by means of a large number of microscopic sections extending freely across the entire area including the stitches. Bacteriologic examination of the tissue about the wounds, either by culture or by the staining of sections, is not mentioned in the report; hence the influence of bacteria that possibly may have been present can not be excluded altogether. At all events the changes found immediately about the wounds in the stomach do not appear to have had any recognizable influence at all upon the fatal ending.

The pancreas contained "numerous minute hemorrhages and areas of gray softening, the size of a pea or smaller." As stated in the report the absence of fat necrosis shows that there was no diffusion of pancreatic ferments into the surrounding tissues, except possibly into the cavity behind the stomach. It is particularly unfortunate that a more thorough examination could not have been made of the pancreas. The lesions described can not be regarded otherwise than as of significance, but in the absence of both bacteriologic and histologic examination their exact cause and nature remain conjectural. It is very easy to suggest that the foci of softening in the pancreas may have contained bacteria whose products when absorbed gave rise to serious general effects. We lack information also as to the nature of the greenish-gray thick fluid, a few teaspoonfuls of which ran out into the peritoneal cavity from "a point just beneath the mesocolon," and which does not seem to have come from the cavity behind the stomach.

The destructive fatty infiltration of the walls of the right ventricle will be found generally acceptable as explaining at least in part the character of the action of the heart during life. The diffuse fatty changes of the heart muscle fibers proper will most likely be regarded as the result of some form of intoxication.

The bacteriologic examination, though not yet completed, seems to exclude the presence of "known pathogenic agents," at least in the track behind the stomach and in the general peritoneal cavity. But cultures were not made from the spleen, the liver, the kidneys, the lungs, or the pancreas. Cultures (presumably only aërobic) from the heart's blood remained sterile. Staphylococci and an unidentified anaërobic, gas-forming bacillus were isolated from the abdominal wound, both during life and after death, but the question of their actual general pathogenic influences will probably be open to various interpretations.

The absence of any mention in the report of the actual condition of the adrenals, the interior of the intestines, etc., and the lack of sufficient material for extended further investigations, as well as the failure to find the bullet, are plainly attributable to circumstances over which the pathologists had no control. While the circumstances under which the autopsy was made prevented the thorough, all-embracing examination that would have been necessary to throw the fullest light upon the many and complicated problems in the case, enough was learned to place the surgical treatment above all criticism of even the most censorious scrutinizer.

THE HEALTH OF THE ARMY.

The report of the Surgeon-General of the Army, which has just been received, contains some interesting details. Notwithstanding the fact that the active service of the Army is in the tropical regions, which are generally supposed to be more trying in a sanitary point of view than temperate ones, its general health for the year 1900 has been excellent. The higher rates of mortality were among the volunteers in the Philippines, thus showing that this type of service has its disadvantages from a sanitary as well as from other points of view. In Cuba the mortality ratio for 1900 was little more than one-half that of the preceding year and, but for the occurrence of yellow fever, would have been still further reduced. There were 144 cases of this disease, of which 32 were fatal. In Porto Rico the death-rate was the lowest, 5.05 per 1000, ever recorded in the army. This may perhaps be in part accounted for by the fact that a portion of the troops there belong to the native regiment and, besides being thoroughly acclimated, are probably placed under better sanitary conditions than even before their enlistment. It points, nevertheless, to the fact that Porto Rico has a healthy climate for a tropical possession. The largest death-rate naturally was in the details for Chinese service and most of this from casualties of active service.

Since the close of the calendar year 1900 the health of the troops in the Philippines has been steadily improving, and the decrease has been noted not merely in the non-efficiency from disease, but also in that from injuries. From January to June, 1901, the non-efficiency was less than 7 per cent., which is certainly a fair showing for the tropics. Smallpox, which was a serious matter in the early occupation of the islands, has been almost entirely suppressed; typhoid fever appears now only sporadically, and bubonic plague which has prevailed among the Chinese and Filipinos has given no anxiety whatever to the army medical authorities. Malaria and dysentery have exceeded the average of the past in all sections and have particularly prevailed in the Philippines, especially among the volunteers during 1900.

Venereal diseases were a cause of inefficiency to an increased extent in all sections, Porto Rico taking the lead, where the excessive ratio of 367.88 was recorded; in this it approached the British Indian army figures. In the volunteers in the Philippines the average (79.94) did not very greatly exceed the army average for the decade 1889-1898 before the Spanish war (71.45). Alcoholism, on the other hand, appears to be decreasing, the admission rate from this cause for the whole army during 1900 being 15.34 as compared with 28.67 per 1000 in the pre-Spanish war decade. This is perhaps partly due to a better grade of men in the service; Dr. Sternberg credits it to the establishment of the canteen, which he thinks induces to temperance. Here, also, the volunteers in the Orient showed to advantage with their ratio of only 8.68, as compared with the 12.41 of the regulars; but both are well below the general army average. Our troops in China gave a still lower figure, and the record of troops in insular and foreign service generally does not justify some of the sensational statements that have been sent out by portions of the public press.

The yellow fever investigation in Cuba and the excellent work done by the army in the study of tropical diseases in the Orient are duly mentioned. The former alone is sufficiently important in its results to make the year memorable in the history of medicine as well as in the army records. The researches in regard to dysentery and other diseases of the tropics, while less striking in their results so far, are hardly less important and it is satisfactory to note that our army medical department is doing such good work in these directions. The report gives data in regard to the personnel, and it appears that the medical corps is gradually filling its vacancies, but there has still to be a large force of contract surgeons employed. Many of the successful candidates for commissions were from this class, which seems, therefore, to be, in a way, an army medical school. It is a pity, however, that in times of nominal peace the army medical corps is still so restricted by law as to make the employment of contract surgeons necessary.

CONTROL OF LEPROSY.

The Molokai leper settlement, according to reports, is decreasing in population. Five years ago there were 1300 lepers, while now there are barely 900. The general cleaning out of the lepers from the other islands and their transference to Molokai since the downfall of the Hawaiian monarchy, has affected the source; there are fewer cases of the disease among the general population, and, therefore, less chance of its spread. Last year an even hundred lepers were sent to the settlment; thus far in the present year not much over 50 have been found to recruit its waning membership. Since annexation still stricter rules have been adopted and it seems probable that we may soon see this famous aggregation of this most loathsome disease become insignificant as compared with its past. There is a chance for another to take its place, however, in the Philippines where the lepers, it is said, number many thousands and where there has been practically no attempt whatever to segregate them thus far. In Hawaii leprosy appears likely to be helped along in its decadence by the dying out of the native race, but this is hardly likely to be the case in the Philippines. Whether, with thorough means of isolation and prevention, it can be altogether eradicated in the tropics is one of the chief medical problems of the future.

NEW YORK STATE MEDICAL ASSOCIATION.

The next meeting of this Association will be held in New York City, October 21 to 24, and promises to be one of the largest in the history of that Association. The program is an excellent one and can not but attract an attendance, not only from Greater New York but from the whole state. This Association now has over 1600 members in good standing. Its rapid growth under the new Constitution can be appreciated when it is understood that over twenty new county associations have been organized during the past year.

LOOKING BACK.

On the fifth of this month our esteemed contemporary, the London *Lancet*, celebrated its seventy-eighth birthday by reprinting the leading editorial in the initial number of that journal. The first issue was dated October 5, 1823, and the present editors propose to reprint each week a selection from the corresponding number of seventy-eight years ago. It seems strange that in the pious city of London a weekly medical journal such as the *Lancet* should have appeared dated Sunday and not Saturday, but such is the fact, and for some months the issuing date was Sunday. If the selections to be made show the vast advance in medical knowledge in the last seventy-eight years they will certainly be interesting, if not instructive. The first editorial is really a preface or announcement, but the editor makes no apology for the appearance of a medical weekly. "It has long been a subject of surprise and regret, that in this extensive and intelligent community there has not hitherto existed a work that would convey to the Public, and to distant Practitioners as well as to Students in Medicine and Surgery, reports of the Metropolitan Hospital Lectures," is the first paragraph. Attention is called to the lectures then being delivered by Sir Astley Cooper of St. Thomas' Hospital, and these are referred to as being the best of the kind delivered in Europe. The first, or introductory lecture, by Sir Astley Cooper, appeared in the first number of the *Lancet*. It was the printing of the metropolitan hospital lectures which, later on, got the *Lancet* into so much trouble, the lecturers protesting at having their private lectures, through which they made money, become public property. Evidently the views held by Mr. Wakly as to the functions of his new weekly were a little vague, for in the concluding paragraph of his editorial he says that, "we shall be indefatigable in our exertions to render the *Lancet* a complete Chronicle of Current Literature." We shall await with curiosity and interest for the forthcoming excerpts from the early numbers of the oldest medical weekly in the world.

MILK SUPPLY IN NEW YORK.

Milk is one of the most important of human foods and also one most liable to contamination between the producer and the user. Hence the complexity of the question as to a pure milk supply and the special interest to the profession of a recent report that has just been given out, by a commission of New York physicians, of which Dr. Henry Dwight Chapin is the head. The method adopted was to establish a bacterial standard of marketable milk, making the bacterial contents per cubic centimeter the index of purity. The leading milk-dealers were invited to co-operate and some of them have apparently aided materially in the investigation, adopting the suggestions made by the commission and showing generally a readiness to carry out what measures were necessary. The need of such was made sufficiently evident by the first test of milk taken directly from the dealers on a mild November day, when the bacterial contents of the samples ranged from 13,000 to 2,800,000. On a warm June day the following summer in six samples taken at random it ranged from 520,000 to 216,000,000. These are mentioned as from the better grades of milk used in New York. Over eight hundred bacteriologic examinations were made and some thirty visits to dairies, some of them a distance of 180 miles from the city. The condition of the barns, the cows, the milkers, the utensils, cooling processes, and transportation and the condition of the cans or vessels when returned from users were all taken up and studied in detail. Each of these was found an important factor, the mere fact of a pile of dry feed left near a cow making in one instance a difference of nearly a million germs in the milk per cubic centimeter. On the other hand, with due care as to all these points, the microbes could be reduced to a few hundreds or thousands and well within the limit of 30,000 per cubic centimeter established as a standard. The commission found that young single men, being less liable to carry infection from home, were preferable as milkers and it was advised that they be clean shaven. Nothing is said about milkmaids, but it would appear that a return to the ways of former times in this regard might furnish the ideal—sanitary as well as esthetic. Much importance is given to the methods of äerating and cooling as well as to the care of bottles or cans after delivery. It is easy to see how one sinner in this respect can destroy much good and neutralize all the care of his predecessors. The work has had its educational value and in every case the dealer has been able to reach the standard of the commission without great expense by following directions. Many who have not before co-operated are now making the required changes and asking for the certification of their product. The commission furnishes a special label for certified milk, which is a guarantee of its purity to the purchaser. Of course, it does not always follow that bacteria in milk are necessarily always deadly, but they have no business there in great numbers and the given test is probably the best that can be devised for the wholesomeness of the milk. This investigation has demonstrated that with proper care they will be absent, and has shown a way to insure the public against very obvious dangers. It suggests, also, other ways in which our profession can protect the public health and make for sanitary righteousness.

Medical News.

CALIFORNIA.

Huntington House a Hospital.—The San Francisco mansion of the late Collis P. Huntington, on Nob's Hill, is to be converted into a charity hospital by Mrs. Huntington.

To Examine Teachers.—The San Francisco Board of Education has appointed Drs. Henry Gibbons, Jr., and Lois Nelson to make a physical examination of the recently-elected schoolteachers.

University Medical Department Changes.—The regents of the State University have appointed Dr. Leo Newmark, now lecturer on neural pathology, professor of neurology, and Dr. Robert Orton M. Moody, assistant in anatomy.

Medical Examiners Sustained.—The application of Dr. J. J. Cowden, a graduate of the "Pacific Coast Regular College of Medicine," San Francisco, an institution held by the Board of Medical Examiners to be not in good standing, for a writ of mandamus compelling the Board to issue to him a certificate to practice medicine was denied, October 3, by Superior Judge Hunt.

Personal.—Dr. F. J. S. Conlan, Nevada City, has located in San Francisco.——Dr. Elizabeth M. Yates, Woodland, has moved to Santa Rosa.——Dr. Cephas L. Bard, Ventura, who has been critically ill, is improving.——Dr. Theo. C. Rethers, San Francisco, has been appointed chief visiting surgeon at St. Mary's Hospital, vice Dr. Alexander T. Leonard, resigned. Dr. Charles D. McGettigan, has been appointed to the visiting staff of the hospital.——Dr. John E. Purdon, Turlock, has located in Stockton.——Dr. Guy P. Corwin, Santa Monica, has moved to Pomona.

GEORGIA.

Major William D. Crosby, surgeon U. S. Army, has been ordered for duty at Fort McPherson, Atlanta.

Dr. Harry M. Clarke, Atlanta, was injured by falling into an elevator shaft, October 7, spraining his back and his ankle.

An examination for license to practice medicine in Georgia was held by the State Board of Medical Examiners at Atlanta, October 8, 26 applicants, including one woman, being examined.

Georgia Pasteur Institute.—The first annual meeting of the Georgia Pasteur Institute was held in Atlanta, October 4. Twenty-two cases had been treated; fifteen proved to have been bitten by rabid dogs, by inoculation and death of other animals. All improved under treatment and are now well.. The institute is now well established and free from debt. The following board of governors and officers were elected: Dr. Henry R. Slack, La Grange, president; Dr. James H. McDuffie, Columbus, vice-president; Dr. Charles D. Hurt, Atlanta, treasurer; Dr. Claude A. Smith, Atlanta, secretary and pathologist; Dr. James N. Brawner, Atlanta, physician in charge, and Dr. Ernest P. Ham, Gainesville; Dr. Madison M. Holland, Statesboro, Mr. Benjamin W. Hunt, Eatonton, and Mr. George C. Waters, Atlanta, governors.

ILLINOIS.

Communicable Diseases.—Typhoid fever is prevalent at Champaign. Smallpox has appeared in Neponset and Venice, Madison County.

New Peoria Hospital.—The new St. Francis Hospital, erected at Peoria, at a cost of $115,000, was thrown open to the public, October 10. The formal dedication will occur next month.

Personal.—Dr. John H. Mannon, Kewanee, returned from a six-weeks' trip to Europe, October 4.——Dr. George S. Henderson, Holcomb, has returned from a visit to Canada.——Dr. James A. Glenn, Ashland, has been appointed a member of the State Board of Charities.

Counties Must Pay Smallpox Bills.—The attorney general has rendered an opinion that counties are liable for all expenses in connection with the care and treatment of smallpox patients, with the exception of the expenses of enforcing quarantine regulations, for which expense the cities are liable.

Chicago.

Rapidly Regained Reason.—Dr. Armstrong, now undergoing sentence in Wheaton jail on account of his connection with the diploma mill frauds, petitioned recently for release from jail on account of rapidly failing mental and physical health. A marked improvement is reported to have followed the suggestion by the district attorney, that if removed from Wheaton he would be sent to the Government Insane Asylum at Washington.

Personal.—Drs. N. Senn, Daniel R. Brower and Jacob Frank landed in San Francisco, October 14, and reached Chicago three days later, from their trip around the world.——Dr. F. M. Adams, interne of Wesley Hospital, has been compelled to seek a change of climate. He has been seriously ill with pleurisy.——Major Henry I. Raymond, attending surgeon, Headquarters Department of the Lakes, has been ordered to duty in the Philippines. He will be relieved by his brother, Major Thomas N. Raymond.——Dr. G. Frank Lydston has been elected a member of the Kauai Kodak Klub of Koloa Kauia, Hawaiian Islands.——Dr. James M. Phelan, an interne in Cook County Hospital, has passed the Army Medical Board examination.

A Typhoid Fever Year.—The current Bulletin of the Health Department says that this first year of the new century promises to be a typhoid fever year. From all parts of the United States come reports of an unusual increase of the disease; in the large cities "Public Health Reports" all show more than the usual autumnal increase. In this city the record of typhoid mortality for the third quarter of the year (July, August and September) shows an increase of 273 per cent. over that of the first six months; that is, from 0.90 per cent. of the total mortality between January 1 and June 30 to 3.36 per cent. of the total mortality between July 1 and September 30. The average autumnal increase in this region is about 70 per cent., so that Chicago's fall increase this year is very nearly four times greater than usual. This enormous increase is, however, to some extent relative, owing to the fact that the typhoid mortality of the first six months of the year was the lowest on record since records have been kept—only nine-tenths of 1 per cent. of the total mortality, as against a previous average of nearly 1.6 per cent. during the previous five years.

INDIANA.

Communicable Diseases.—Smallpox is reported from Coldwater and Richmond; Vincennes has 40 cases of typhoid fever, and four cases of diphtheria are reported from North Judson.

Personal.—Dr. R. O. Tidrick has moved from Bringhurst to Marion.——Dr. H. E. Phares, Morristown, will locate in Shelbyville.——Dr. Herbert O. Statler, Goshen, has moved to Kalamazoo, Mich.

Smoke for Consumption.—Dr. George R. Peckinpaugh, Mount Vernon, is reported to have discovered that inhalation by the patient of the fumes or smoke from the burning of a mixture of various kinds of forest leaves kills the bacilli in the lungs. The Evansville Board of Health is carrying on experiments with this treatment on the consumptive patients at the County Poor-House.

IOWA.

Diphtheria is so prevalent at Reinbeck that it has been deemed necessary to close schools and churches.

An isolation hospital site at Dubuque has been offered the city by Alphonse Rhomberg, well located and with good drainage.

Bequest to St. Luke's Hospital.—Davenport is to receive a bequest of $3000 from Mrs. M. Dawes, Brooklyn, N. Y., as a tribute of respect and affection to the memory of her aunt, the late Mrs. Frances M. French, Davenport.

Personal.—Dr. W. P. Burke, Iowa Falls, leaves in December for a year's study in Europe.—Dr. F. R. King, Anita, has purchased the practice of Dr. F. C. Mitchell at Kenwood Park, Cedar Rapids, and has moved to that place.——Dr. John W. Hemsted, Carson, who has been in ill health for two years, has so far improved that he will soon resume practice.——Dr. Homer J. Gilfillan, Trenton, has moved to Mount Pleasant.——

Dr. Fred L. Wells, Des Moines, has located in Hartford City, Ind.

KENTUCKY.

Epidemic Diseases.—Smallpox is reported near Preston and at Wasiato; diphtheria in malignant form is prevalent in Covington and in Garrard County; and scarlet fever at Bethel, Burgin, Mount Sterling and Maysville, where the public schools have been closed.

Personal.—Dr. Charles E. Thompson has returned to Covington and resumed active practice.——Dr. H. L. Farris, Kingston, has located in Memphis, Tenn.—Dr. George W. Norman, Uniontown, has moved to Owensboro.——Dr. William R. Thompson, Mount Sterling, sustained serious injuries October 10 in a runaway accident.

Examination of Water.—Dr. J. E. Cashin, Louisville, will receive $500 for his services to the city for the examination of the water supply of the city and the water of the river at the waterworks pump to determine whether the sewage of Lakeland Asylum was contaminating it. It was decided that the sewage was a constant menace, and steps are being taken to erect a plant for the destruction of the sewage and the cleansing of the bed of the creek.

License Required in Louisville.—An ordinance has been introduced into the Louisville Common Council requiring all applicants for license to practice medicine and dentistry in the city to show a certificate from the State Board of Health and requiring a license fee of $10 to be paid in advance. The rule in the case of dentists is modified, requiring them to exhibit a diploma from a reputable college of dentistry. The city attorney explained that the object of the ordinance was to prevent unqualified men from being granted licenses.

MARYLAND.

Dr. T. W. Simmons, former health officer of Hagerstown, has brought suit against that city for $330 alleged to be due for salary.——Dr. J. C. Hummer, on the occasion of his 69th birthday, was tendered a surprise reception by Eureka Lodge, Ind. Order of Good Templars, and was presented with a handsome watch, chain and charm.

Baltimore.

A bazar for free beds in the Franklin Square Hospital of the Maryland Medical College, opened at the Hospital Building on October 14.

The deaths for the week ended October 12 were 160, being a rate of 16.6 per 1000 per annum—white 13.50, colored 30.28. Only 6 deaths were from typhoid fever.

Anti-Mosquito Ordinance Defeated.—Councilman Brown's ordinance appropriating $15,000 for the destruction of mosquitoes was defeated in the city council.

No Smallpox in Baltimore.—There are no cases of smallpox in Baltimore at this time, it being practically the only large Eastern city free of the pest. There are 5 cases in the counties.

Nurses' Home.—Work has been begun on another story and a roof garden on the Nurses' Home at the University of Maryland, owing to an increase in the number of nurses recently from 34 to 40. The work will be completed in six weeks.

Johns Hopkins Hospital Historical Club.—The first session of the Johns Hopkins Hospital Historical Club for the season was held October 14, when the following papers were read: "Jacob Bigelow," by Dr. James G. Mumford, of Boston; "William Hunter's Medical Library," by Dr. William Osler.

Opposition to Isolation Hospital.—Much opposition is manifested to the selection of the site for the Infectious Diseases Hospital in the northern part of the city near Druid Hill Park. The residents of that section are agitating the matter. The city council has threatened to withdraw the appropriation.

Northeastern Dispensary.—The new building of the Northeastern Dispensary is under way. When completed it will cost about $5000, and equipment will cost $1000 additional. Founded in 1853, this institution has occupied the same quarters ever since, although enlarged several times. The structure will be 26 by 60 feet, with brick walls, and two stories high. The first floor will contain four private consultation rooms and a large waiting apartment with seating capacity for 100 persons. On the second floor there will be two consultation rooms and another waiting room. The present staff of three resident and three consulting physicians will be increased to twelve. The institution is supported by voluntary contributions and city appropriation.

Personal.—Dr. J. Frank Crouch has returned from Europe.——Drs. William Osler and William H. Welch attended the meeting held in New York on October 12 in honor of Professor Virchow's 80th anniversary, the former being the chairman of the meeting. Both responded to toasts, the former on "Virchow as an Archeologist and Hygienist," the latter on "Virchow as a Pathologist."——Dr. Thomas S. Cullen has returned from his wedding trip.——Dr. Albertus Cotton has returned from a visit to friends in Ohio.——Dr. E. Boeninger sailed for Bremen on October 8.——Dr. David A. Medders has returned after a long visit to the Eastern Shore of Maryland.——Dr. Robert Love has returned after several months spent abroad.——Dr. Malcolm Morris, of England, lectured last week at the Johns Hopkins University, on "Medical Endowment."——Dr. Howard A. Kelly gave a reception to the Hopkins Young Men's Christian Association, at his house on Eutaw Place, October 11. The naval militia practice ship *Sylvia*, with Dr. Edward Geer in command, returned from Hampton Roads, October 7.

Johns Hopkins Report.—According to the annual report of the Johns Hopkins University just out, there were 651 students enrolled, 270 of these being from Maryland and 17 from foreign countries. There were enrolled in the medical school 209, all college graduates. Of the 143 professors and instructors, 58 are in the medical school. Last year 41 received A.B., 53 M.D. and 30 Ph.D. Since the institution began 4089 students have entered, 1617 being from Maryland. The whole number of medical degrees so far conferred is 166. A considerable part of the report is devoted to the proposed change of site. Wealthy citizens have offered 176 acres of most desirable land immediately adjoining the city on the north, provided $1,000,000 in money be raised by subscription. Efforts are to be made to secure this valuable property for a permanent location. Dr. Henry M. Hurd, superintendent of the hospital, contributes a letter describing the work of the commission of four medical men from the university who were sent to the Philippines to study tropical diseases. The Baltimore Association for the Promotion of University Education for Women has presented $800 for a fellowship in the medical school for the coming academic term, and Dr. Florence R. Sabin, a graduate of 1900, has been selected by the medical faculty as the first incumbent. Dr. Joseph R. Ames has been made director of the department of physics, made vacant by the death of Prof. Henry A. Rowland.

MICHIGAN.

"Dr." William F. Winney, Stark, was fined $10 and costs by a Northville justice, October 5, for practicing medicine without a license.

Personal.—Dr. Beverley D. Harison, Sault Ste. Marie, is visiting the Buffalo Exposition.——Dr. A. C. Wood, Glendora, has located in Coloma.——Dr. E. M. Herdman, house surgeon at the General Hospital, Sault Ste. Marie, has gone to Ann Arbor.——Dr. Arthur McGugan, formerly of the staff of the State Hospital for the Insane, Kalamazoo, has moved to Denver, Colo.——Dr. Sumner A. Edmands, Mendon, has purchased a practice in Goshen, Ind.

Mortality of Michigan.—There were 2886 deaths returned to the secretary of state for the month of September, corresponding to an annual death rate of 14.7 per 1000 population. This number is 214 more than the deaths returned for August, but is more than 400 less than the number recorded for September, 1900. There were 714 deaths of infants under one year of age; 262 deaths of children aged from 1 to 4 years, inclusive, and 697 deaths of persons aged 65 years and over. There was a marked increase in the number of deaths returned from typhoid fever and from diphtheria as compared with the preceding month.

Cornerstone Laid.—On October 15 the cornerstone of the new medical building of the University of Michigan, Ann Arbor, was laid with appropriate ceremonies. Dr. John A. McCorkle, Brooklyn, of the class of 1873, gave an address under the auspices of the Students' Medical Society; Hon. Herman Kiefer, chairman of the Committee on the Department of Medicine and Surgery, then introduced Dr. Leartus Connor, president of the Michigan State Medical Society, under the auspices of which the cornerstone was laid, who addressed the assembly. President James B. Angell and Dr. J. George Adami, Montreal, also delivered addresses, and in the evening a reception was given to the invited guests in the rooms of the Alumni Association.

NEW YORK.

The State Board of Health will give a hearing, October 15, at Yonkers, on a complaint that the Yonkers Railway Company is creating a nuisance by the use of soft coal.

Personal.—Dr. Wilhelm H. Keller, Spring Valley, has opened an office in Haverstraw.——Dr. W. F. Cregg, Norwich, has returned to Camillus.——Dr. Oliver A. Brumenthal has been appointed to examine into the physical condition of the school children of Syracuse.

New York State Medical Association.—The eighteenth annual meeting of this Association will be held at the Academy of Medicine, New York City, October 21 to 24 inclusive. In addition to a program containing many papers of merit, symposia on "Malignant Growths" and on "Arterio-Sclerosis" will be held. The annual dinner will be given in the evening of October 23, at the Murray Hill Hotel.

August Mortality.—There were 10,999 deaths in the state during August, according to the monthly bulletin of vital statistics issued by the State Board of Health. The number of deaths this month is 1300 less than July, which was excessive. The only material decrease from that month was, however, in deaths from accident and violence; there were five deaths from lightning. Typhoid fever increased from last month in all the districts, and diphtheria to a small extent; all local diseases have caused fewer deaths. Deaths from acute respiratory diseases have fallen to 500, which is low even for this month, the month of its smallest mortality; 280 of the deaths were from pneumonia. Outside of New York City there were 210 deaths from Bright's disease. Smallpox caused 40 deaths, all in the maritime district, and since August 1, cases have been reported at Scheneous and Tupper Lake, one each, two at Hillburn, three at Ellenville.

Buffalo.

Dr. Jacob Otto has been appointed assistant surgeon to the 74th Regiment, N. G., N. Y.

Dr. Ralph Harris has accepted the position as an instructor in anatomy at Cornell, Ithaca.

Dr. W. W. Carlton, Waterloo, N. Y., has received the appointment of junior house physician at the German Hospital.

Dr. Casey A. Wood, Chicago, read a paper on "Exophthalmic Goiter; Its Symptoms, Diagnosis, Pathology and Treatment," before the Ophthalmological Section of the Buffalo Academy of Medicine, October 14.

Personal.—Dr. Herman Mynter is in New York.——Dr. Herman G. Matzinger has returned to the city.——Dr. J. C. Schrader, Iowa City, Iowa, and Dr. S. W. S. Toms, Nyack, N. Y., were guests of Dr. Thomas G. Allen.——Dr. Max Einhorn, New York, was the guest of Dr. Charles G. Stockton.

New York City.

University Medical School has received a donation of $25,000 from a benefactor, who wishes his name withheld.

Inspectors of Vaccination.—The Brooklyn Board of Health has appointed nineteen physicians as inspectors of vaccination in the public schools.

Medical Institute Plans.—The following tentative working plan has been adopted by the officers of the Institute for Medical Research: To expend $20,000 a year, divided so as to provide for forty scholarships. To make appointments for one year. To have candidates recommended by heads of various laboratories to the Board of Directors. To choose only persons pursuing, or about to pursue, investigations on some important subject in pathology, bacteriology, or hygiene.

Test of Koch's Theory.—Interesting experiments of much importance are being made at the bacteriological laboratory of the Board of Health. They are being held to test Prof. Koch's theory that human tubercle bacilli will not readily infect cows or calves. So far the experiments have shown the theory to be correct, it is said. All the calves reacted to a tuberculin test, but the reaction was very slight, and may have been due to inflammation or other causes considered by the investigators at the laboratory to be of minor importance.

TENNESSEE.

A typhoid epidemic is raging at Jamestown, Fentress County, a place of about 200 inhabitants. There are now 25 cases, with 2 deaths.

Tennessee Medical College, Knoxville, held its thirteenth annual opening exercises, October 1. Dr. Charles P. McNabb, dean of the faculty, delivered the opening address.

Scarlet Fever.—Scarlet fever has been reported during the past month from seventeen counties, to the State Board of Health. Greenfield, West Point, Columbia, Gallatin, Saundersville and Shelbyville, all report cases.

Vanderbilt University Medical Department, Nashville, began its year's work, October 1, with a freshman enrolment of 75. Addresses were delivered by the chancellor of the university, and Dr. William L. Dudley, dean of the medical school.

Personal.—Dr. John Brown has been appointed assistant physician at Lyons View Asylum, Knoxville.——Dr. Douglas Haggard has returned to Nashville, after a stay of three years in New York.——Dr. W. W. Parker, Smithville, has resigned his position as pension examiner.——Dr. William W. Hill, Chattanooga, has moved to Dunlap.——Dr. Garland F. Cummins, Bellwood, is reported to be ill with smallpox.

Smallpox Statistics.—At the semi-annual meeting of the State Board of Health, the secretary reported that between April 1 and September 12, there had occurred a total of 2059 cases of smallpox in the state, with a total of 94 deaths, showing a death-rate of 4.56 per cent. Of these cases, 816 were white and 1210 colored. There were 54 cases of smallpox on hand at the time of the report, located in eleven counties. From the lay local press we learn that smallpox is present in Dalton, Bellwood, Jackson, Hollywood, Chattanooga and Rossville.

WISCONSIN.

Tear Down the Signs.—Much difficulty is being experienced in the vicinity of Kubia, where smallpox exists, by the attitude of the farmers, who object so strongly to the yellow placards that in some cases they have torn them down.

Honor Virchow.—Milwaukee physicians gave a dinner, October 12, at the Republican House, in celebration of the eightieth birthday of Professor Rudolph Virchow. A loving cup and congratulatory address, signed by those taking part, were sent to him.

The State Board of Medical Examiners held its last quarterly examinations at Oshkosh, beginning October 8, and examined twenty-two applicants for certificates to practice. The next examination will be held at the Hotel Pfister, Milwaukee, January 14.

Fire at Insane Hospital.—A fire, supposed to be originated by spontaneous combustion, started in a coal shed at the Northern Hospital for the Insane, at Oshkosh, October 5, and for a time threatened the entire institution. The roof of the morgue, a carpenter shop and 3500 tons of coal were destroyed, but no one was injured.

Scarlet Fever and Diphtheria.—There are 12 cases of scarlet fever at West Superior.——At Oshkosh there have been reported from September 1 to October 4 in all 26 cases of scarlet fever and 34 cases of diphtheria. The spread of these diseases is general in the city and the health officer fears an extensive epidemic of both diseases.

Personal.—Dr. George A. Barker, Shell Lake, will take the practice of Dr. H. M. Read, at Menomonie. Dr. Read will go abroad to study.——Dr. Horace M. Brown, Milwaukee, has returned from Europe.——Dr. E. Y. Arnold, formerly of St. Croix Falls, has located at West Duluth.——Dr. E. C. Jacobs, Durand, has associated with him in his practice Dr. A. D. Smith, formerly of Eau Claire.

Wisconsin College of Physicians and Surgeons held the opening exercises for its ninth session, September 24, Dr. Homer Sylvester delivering the address of the evening. Apparatus to the value of $1000 has been added to the laboratories. New members of the faculty have been added, as follows: Dr. McNaughton, department of surgery; Drs. Joseph Donovan and James Ryan, materia medica and therapeutics; Dr. Bjorkman, Racine, physiology, and John S. Donovan, jurisprudence.

Fumigate the Camps.—The work of fumigating the lumber camps has been begun and the places that proved last winter such excellent breeding ground for smallpox are to be thoroughly disinfected. The occupants of the camps themselves seem to realize their danger and the opposition which was manifested during the attempts on the part of the health authorities last year, is no longer present. Dr. H. J. Connor, who was appointed by the State Board of Health, has charge of the work.

Smallpox.—The alarming report that seventy-one cases of smallpox were discovered October 7, at the government school at Odanah, on the Bad River Reservation, has prompted active steps by the health authorities. The village is quarantined, the three district schools have been closed and the parochial school has been converted into a hospital. The form of the disease seems to be mild, but the sudden and widespread outbreak will make its confinement difficult.——At Stockbridge a case of smallpox was discovered in a tent-covered wagon occupied by a threshing-machine crew.——The health officer of La Crosse investigated the alleged smallpox epidemic at French Island and found the disease in three families. The places infected have been quarantined.——Three cases are reported on South Ridge, south of La Crescent, Minn.——There are now but two cases of the disease in West Superior.

CANADA.

Personal.—Dr. Albright, senior surgeon of the Elder-Dempster line, has been appointed surgeon to the Canadian Pacific Railway steamer, *Empress of India*. Dr. Fitzgerald of Montreal succeeds him.

Victoria Cottage Hospital at Regina.—Last week, while touring the Canadian Northwest with the Royal party, Lady Minto opened the Victoria Cottage Hospital, at Regina, towards the erection of which the Lady Minto Cottage Hospital Fund contributed $1,500.

From Montreal.—Montreal, too, is also threatened with another epidemic of smallpox. Only a few days ago the city was declared free from the disease, but the Provincial Board of Health of Quebec considers that owing to an outbreak at St. Henri, a suburb, and the epidemic at Ottawa, that it is important enough to issue a general call for vaccination. A special hospital is being established to deal with any cases developing.

From Ottawa.—The Capital seems to be face to face with an epidemic of smallpox. Dr. Robillard, the medical health officer, is away on his holidays and the health of the city is in charge of Dr. Law in the interim. The week ending October 6, fifteen new cases developed, and during the past week there were a good many more. The Board of Health has ordered a general vaccination, and Dr. Bryce has been summoned from Toronto to advise on the matter.

Without Tuberculin Test.—The United States Department of Agriculture has issued an order that all Canadian cattle imported into the United States for exhibition purposes during the time the International Live Stock Exposition is being held, at Chicago, may be brought in without being subjected to the tuberculin test, but they must be accompanied by a certificate from the Canadian official veterinarian stating that they are free from contagious and infectious diseases.

Notre Dame Hospital, Montreal.—The annual meeting of this hospital was held last week, and it was decided to build a new hospital in the near future. The medical report stated that during the past year 2200 cases had been treated, an increase of 177 over the previous year. The cost of each case was ninety cents per day, a decrease of eight cents, in comparison with the preceding year. Of the total number of cases treated 1854 left the hospital cured, 155 were not improved and 134 died, making the percentage 6.09. Among the total deaths 69 were in a precarious condition when they reached the hospital. In the outdoor department there were 20,078 consultations, or a decrease of 1740 on the previous year. In this department five cents is charged for consultations for those able to pay. The financial report stated that the expenses were $29,480.54, and the receipts $32,293. Dr. E. P. Lachapelle was re-elected superintendent, and Dr. Benoit, secretary. Next year the annual report will be published in English, as well as in French, owing to the increasing interest taken in the affairs of the hospital by the English-speaking population.

Ontario Board of Health.—The regular quarterly meeting was held in Toronto on October 9 and 10, the chairman, Dr. Vaux, of Hamilton, presiding. Dr. Bryce, the secretary, in his official report, stated that there had been in the province for the first nine months of the year 1064 cases of smallpox, which was the largest outbreak in Ontario in the history of the Board. Only six deaths had occurred, which was less than 1 per cent. It was estimated that over forty cases had occurred since October 1, in places including Ottawa, Oxford County, Manitoulin Island and the District of Algoma. Dr. Bryce believes that the time has arrived in the history of the Dominion of Canada when the government should establish an institute for scientific research, where vaccines and anti-toxins would be prepared. The secretary also presented another report on the question of tuberculosis, and it was recommended that municipalities be advised to stop the people from expectorating in public places, and that physicians be compelled to report all cases of tuberculosis. Further advice was given that tenements, factories, schools and other public buildings be regularly inspected to promote cleanliness, ventilation and other sanitary conditions.

FOREIGN.

Prize for Research on the Invisible Rays.—The Vienna Academy of Science will award the von Baumgartner prize of 2000 kronen at the close of 1903, for the best research work on the invisible rays.

Deaths Abroad.—Adolf Winter, professor of pharmacology at Leipsic, and formerly librarian, died September 18, in his 86th year.——The death is also announced of C. Euler, to whose efforts the Turnwesen, gymnastic athletics, owes much of its success in Germany.——G. Jablonowski, of the Berlin Anatomic Institute, 43 years of age.——H. von Wyss, professor of forensic medicine at Zurich University.——Our Grecian exchanges report the death of Jules Galvanis, professor of surgery at Athens.

Nineteen Physicians in Quarantine.—The steamer *Senegal* left Marseilles for a trip to Palestine, with 174 tourists on board, including 19 physicians and their families. Soon after leaving, a case of bubonic plague was discovered among the crew, and the steamer returned to Marseilles, where the party were quarantined. One other case occurred among the sailors, but the rest of the crew and passengers escaped. Chauffard, Richardière and Bucquoy are among the physicians who have thus been enabled to study at first hand the workings of the quarantine system.

International Congress of Physiology.—This congress convened at Turin, September 17, with about 300 members. Forster, of Cambridge, was elected perpetual honorary president, as a token of gratitude for his efforts in organizing these international congresses of physiology. Bowditch, of Boston, was elected president, and Chauveau, of Paris, second president. The members sent a telegram to Queen Margherita thanking her for the successful initiation of the laboratory of physiology, which has been constructed on top of Monte Rosa. Mosso announced that the Italian government has recently appropriated funds to equip and maintain it. He invited the nations represented at the congress to consider the laboratory an international institution and to send expeditions to it.

LONDON LETTER.

Reform in the Army Medical Corps—Drastic Charges.

At last, under the severe pressure of necessity, the War Office has been driven to grant some very substantial reforms of the Army Medical Corps. The need for such has been repeatedly pointed out in The Journal, and the fact that the so-called "hospital scandals" of the South African war were the result of the domination, and consequent muddling of army medical matters by the military authorities of the War Office. The Commission on Army Medical Department which sat under the presidency of Mr. Broderick, the Secretary for War, has been already described. Its report has just been published. The Committee recommend that the Army Medical Corps be placed under the supervision of an Advisory Board, to be composed of the following: The Director-General of the Corps, chairman; the Deputy Director-General, vice-chairman; one officer of the Corps, with special knowledge of sanitation; one officer, with special knowledge of tropical diseases; two civilian physicians and two civilian surgeons, appointed by the Crown, on the recommendation of the Secretary of State; one representative of the War Office, appointed by the Secretary of State; one representative of the India Office, appointed by the Secretary of State for India, and the Matron-in-Chief, of Queen Alexandra's Imperial Military Nursing Service—for nursing service only. To be eligible for appointment on the Advisory Board, a civilian physician or surgeon must have held a post on the staff of a leading civil hospital, and be not more than 55 years old on appointment. He shall hold office for three years, with renewal upon extirpation, but terminable upon his attaining the age of 60. He shall receive an honorarium of $1000 per annum.

But the most important reform is in the conditions of admission to promotion in the Corps. The rates of pay are considerably increased. The following are proposed: Lieutenant, $1600 per annum; captain (i. e., after three years' service), $1900; captain after seven years' total service, $2000, and after ten years, $2300; major (i. e., after twelve years' total service), $2900; major, after three years' service as such, $3150; lieutenant-colonel (i. e., after twenty years' service, $3500; lieutenant-colonel, $4000; colonel, $4800; surgeon-general, $7500; director-general, $10,000. In regard to promotion, a most important innovation is the substitution of promotion by examination for promotion by seniority. On the completion of six years' service as captain, an officer can retire with a gratuity of $5000. Should he elect to continue, between his ninth and twelfth year of service he will be attached to a hospital at one of the military centers for six months, so as to be able to study at a modern hospital; then he presents himself for examination. Having passed the examination and completed twelve years of service, he will be promoted to a majority. Three years later he can retire on a gratuity of $12,500. If he continues he will be granted three months' study leave and then be required to qualify by examination for promotion to the rank of lieutenant-colonel. This examination covers ten subjects, including the medical history of modern campaigns and the army services of other powers. If he fail to pass, he will be compulsorily retired on the gratuity last mentioned, or he may by special permission be permitted to complete twenty years' service, and retire on a pension. The committee is strongly of the opinion that the establishment of a military hospital and medical staff college for the training of officers of the Medical Corps would conduce to the efficiency of the service. Taken as a whole, the report is highly satisfactory, and its adoption must greatly improve the personnel of the Medical Corps and remove most of the crying grievances of its officers.

Sir James Paget's Memoirs.

The Memoirs and Letters of Sir James Paget, edited by his son, Mr. Stephen Paget, have just been published. The work, both from the high importance of the subject and the competence of its editor, is one of the most valuable and instructive contributions on medical biography ever published. Sir James Paget, who died nearly two years ago, was for many years regarded as the leader of the profession in England—a position which he attained by the most arduous and unremitting work, in spite of poverty in his early years. The editor of the Memoirs, Mr. Stephen Paget, is himself a surgeon and has made several valuable contributions to surgical literature. Perhaps the most important are his paper on "Inflammation of the Parotid, After Abdominal or Pelvic Lesions," and his life of John Hunter. He is master of a graceful literary style, in which the effects of heredity can be traced. The book is the story of a life full of work. The number of hours which Sir James Paget worked for many years seems almost incredible—sixteen hours a day. He was never regarded as a great operator, but as a diagnostician he was unrivaled and his opinion in a surgical case was relied upon as the highest that could be obtained. The universal feeling of respect with which he was regarded, both by the profession and society generally, was inspired not only by his professional skill, but also by his character as a man, absolutely above the suspicion of ever being actuated by any but the highest motives. His son says of him: "He was very proud of his profession, and proud of his own hard work for it and in it; he never dreamed of being above it, or of going outside the limits of it; and its service was perfect freedom to him."

Smallpox Outbreak.

There are now 160 cases of smallpox in hospitals in London, and 5 new cases were admitted on the last day of the report. Though the number can not be described as alarming a disquieting fact is that cases occur in all parts of the vast metropolis. The local government board has issued circulars to the borough councils and boards of guardians of the poor instructing them to take energetic measures in connection with the cases—to isolate the patients, vaccinate persons exposed to infection and disinfect the premises. The neglect of vaccination, which is partly the result of the recent act abolishing compulsion in response to the clamor of anti-vaccinators, is to some extent responsible for the outbreak. Thus in the Borough of Hackney it is estimated that in a population of 50,000 children under the age of 10, 20,000 are unvaccinated. Here the authorities are exerting themselves to the utmost to prevent the disease obtaining a hold on the parish. The residents of several of the infected houses are being paid $5 a week on condition that they do not leave the building or send their children to school. The total deaths from smallpox, which had been 7, 7 and 9 in the preceding weeks, fell last week to 3.

A nurse in a Paris hospital fatally burned a child by placing it in almost boiling water. She was condemned to 15 days' imprisonment and 2000 francs damages.

THE VIRCHOW ANNIVERSARY IN NEW YORK CITY.

The medical world did honor to Dr. Rudolph Virchow, last week, on the anniversary of this great man's eightieth birthday, by a dinner which was held in New York, at Sherry's last Saturday, to which over 100 representative medical men sat down.

Dr. C. L. Dana had devised an ingenious and handsome menu. It represented a facsimile of Virchow's *Archiv für Pathologische Anatomie*, with its familiar green cover; within there were two portraits of Virchow. One was taken at the age of 38, and had been given to Dr. Andrew H. Smith, of New York, who in 1858-1859 was a student in Berlin. A later portrait of Virchow, at the age of 78, was also included in the menu. Following this was a list of the more important publications of Virchow on matters medical, anthropological, hygienic and social.

Following the dinner, Dr. William Osler, acting as chairman, spoke of Virchow as a scientist, more particularly as an anthropologist and hygienist. He said that they had gathered, this night, for a notable occasion and on a notable night, for, eighty years ago, there had been born into the world of medical science, a genius. Genius, he said, had been defined as a matter of birth and environment. With reference to this last factor, Virchow had been fortunate, since he had had the privilege of being a student under Johannes Müller. What this had meant to the young man was well expressed in Virchow's address, given at the death of his master. At the time of Müller's entrance into the medical arena, vague and mystical conceptions of disease were taught, but he had introduced into the science of pathology the too long forgotten ideas of the old Greek philosophers and teachers. Observation, study and analysis were the fundamental considerations of these early physicians, and it was to the undying credit of Johannes Müller that the processes of exact observation were brought to bear on the problems of disease.

Speaking of his work in the field of archeology, Dr. Osler said that it was not a mere dilettante, but as an ardent and faithful student; that he was not a mere dabbler in skulls and in relics, but a recognized master; and no congress of archeology was ever complete without his presence.

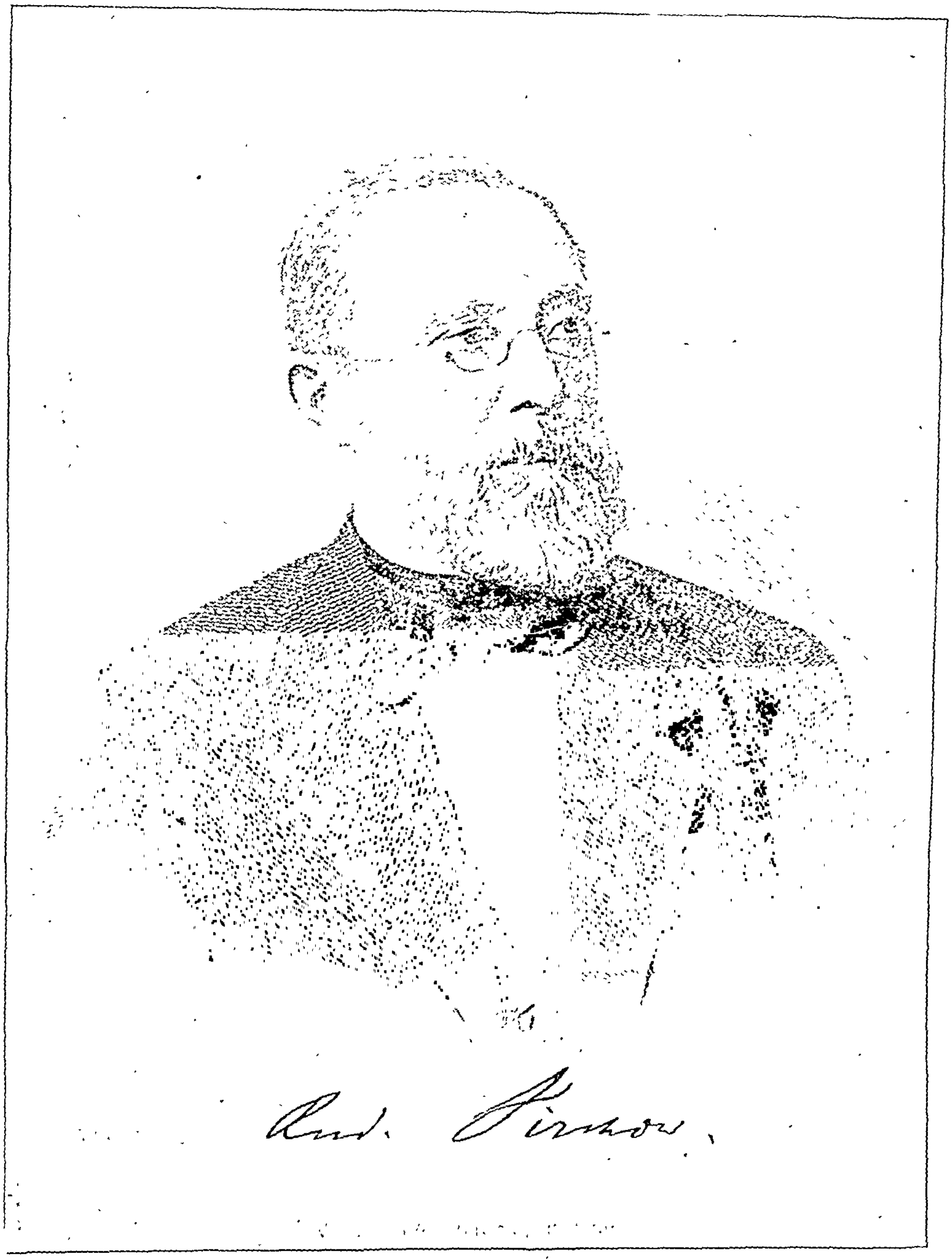
With Pettenkofer, of Munich, he shared the honor of being the foremost authority of Europe in matters connected with public hygiene, and the Prussian Government, and more particularly the city of Berlin, owed much to his genius as a hygienist. The list of his contributions to preventive medicine, as revealed in his "Gesammelte Abhandlungen," bears testimony to his extraordinary fertility of idea and activity in execution.

Dr. Gould, of Philadelphia, then read a telegram of congratulation to Dr. Virchow from his friends and admirers in America.

Dr. W. H. Welch, of Baltimore, spoke of Virchow as a pathologist. It would take, he said, a genius approaching Virchow himself, in attempting to correctly present this many-sided man. As an anthropologist, he was an acknowledged authority, and Dr. Welch related an anecdote, in which an acknowledged authority in anthropology had asked Dr. Welch if Virchow had any reputation in medicine, as he had always thought of him only as a fellow anthropologist.

Virchow, he said, had been an integral part in the great renaissance that had been going on in science, in whose collateral branches such men as Brucke, Myers, DuBois, Raymond, Helmholtz, Schroeder, and others were such notable lights. He had been fortunate in the choice of his early studies, for in the observations that he made on the chemistry and the morphology of the blood; in his later studies on inflammation, and in his work on cellular tissues, he was working with the fundamental problems of pathology. His work on thrombi and emboli constituted an epoch in the study of disease processes, and his "Cellular Pathology," which appeared in 1858, was a classical work, making a step forward for all time. It is true that its foundations have been attacked, but they have never been superseded. Certain details have been modified, but the fundamental truths are truths for all time. Morgagni had first brought into prominence the importance of *organs*, Bichat had shown the relations of the *tissues*, but Virchow laid the foundations of pathology in the study of the cell. One of the most important precepts to be learned from Virchow's work is the value of method as opposed to doctrine. Disease, for him, was "life under changed conditions," and it is this attitude towards the investigation of vital problems that has placed pathology so high in the sciences.

Dr. Andrew H. Smith, of New York, spoke of Virchow as a teacher and as a man, and gave a number of pleasant reminiscences of his student days of 1858-1859 in Berlin. One of the things that most strikingly appealed to his mind was the method that Virchow had inaugurated in the dead-room. Traube was then active in his teachings and many of his postmortems were associated with the smell of burnt meat, as he used small red-hot irons. The postmortems were then conducted with the view of ascertaining what the patient died of and the affected organ only was examined with any minuteness. Dr. Smith said that he had been electrified to see Virchow open the body from the chin to the pubes with one sweep of his butcher's knife and he would then make the dead man tell his secrets, so searching was the scrutiny. The new point of view of learning everything possible from the dead body was a revelation.


Rud. Virchow.

Dr. Smith also spoke of Virchow's early resolve to write in a simple and straightforward style and his written and spoken words were always expressed with a clean-cut straightforwardness, rarely found in medical literature. As a man, Virchow was very democratic and approachable. He was always pleasant and ready to aid his students and above all was a constant stimulus to accurate observation.

Dr. Jacobi then spoke of Dr. Virchow as a citizen. He dwelt particularly on Virchow's public work, from the time when he first lost governmental favor by his honest and enlightened report on the typhus epidemic in Silesia in his early manhood to his latest parliamentary services. Reform in society as well as in science has been his forte; the city of Berlin, with its model administration, owes largely to him the fact that it is a cleanly, healthy, well-governed city, in spite of constant interference. The empire is indebted to him for the organization of the medical care of its soldiers in its later wars, and in this connection Dr. Jacobi quoted Virchow's appreciative acknowledgment of our own country's contributions to the medical science of war. For nearly fifty years Virchow held a seat in the town council of Berlin, for dozens of years in the representative council of Prussia and the imperial parliament; he has always stood firm for principle and right. While engaged in scientific research, which in universality and importance has been rarely even approached by others, he has never forgotten that his services also belonged to his countrymen; his example should teach young medical men that the pursuit of science and good citizenship are not mutually exclusive. His life is a great lesson that we should learn, no matter how high our scientific position or vast our learning we belong to our fellow-men in duties of reciprocity and good citizenship. But we may never have an opportunity again to thus honor one who has been equally great, alike in science and citizenship. One thing we may say of him, with Goethe: "He has satisfied the best of his era, he has lived for all time."

Miscellany.

Malaria Simulating Hydrophobia.—At the recent Pan-Hellenic Medical Congress, held at Athens, Nicolettis reported a case of apparent acute hydrophobia in a child, who exhibited *all* the ordinary symptoms, including biting the persons around. He was not known to have been bitten by any animal, but had a history of preceding malaria. Nicolettis diagnosed the case as pernicious malaria, instead of hydrophobia, and injected quinin subcutaneously, with complete cure of all the symptoms in three days. In the treatment of malaria, one member of the congress lauded a mixture of quinin and methylene blue as very effective in his experience, while another ascribed great therapeutic efficacy to a combination of belladonna, quinin and iodoform.

An Accouchement in Dahomey.—Dr. Blin describes, in the French *Annales d'Hyg., etc. Coloniales*, 1901, 1, the peculiar features of an accouchement of a Dahomey high caste woman at which he was allowed to be a spectator. During the last stage, two women massaged the thighs and flanks of the patient continuously, scolding her at any expression of pain. A stopper of herbs rolled into a wad, was inserted in the anus—"a hygienic measure highly to be recommended," he remarks, "for the sake of both the infant, the mother and the accoucheur." A round piece of wood like a broom handle anointed with palm oil and aromatic substances, was introduced into the patient's mouth and pushed down into her throat. The purpose of this was to retain the air in the thorax as one instinctively closes the glottis in straining during defecation. Boiling water was used copiously in cleansing.

Simple Test for Fat in the Blood.—Zaudy, of Ebstein's Clinic, describes in the *Deutsche Archiv f. Klin. Med.* for June, a very simple method of detecting lipemia. A small drop of blood is drawn on the center of a cover glass which is inverted and the hanging drop examined. The serum that collects in a drop of normal blood is perfectly clear, but in case of lipemia it is turbid, of a bluish or grayish white or even milky hue, if examined within the first few hours. The microscope shows the droplets of fat, but the macroscopic aspect of the serum is sufficient to disclose the lipemia. The only source of error is that an excess of fibrin may simulate the fat, but the microscope reveals the difference at a glance. The blood from a large number of patients was examined, all suffering from affections usually considered as associated with lipemia, but no fat was found in the blood except in the diabetic patients. It is possible to trace the course of a fibrinous pneumonia with this hanging-drop method. The blood from lying-in patients always showed a ring of fibrin around the clot.

Treatment of Obesity.—E. Stadelmann describes, in the *Berliner Klin. Wochenschrift* for June 24, a case of obesity in which the weight was reduced 120 pounds in a year. This was accomplished by restricting the diet to the amount of calories which experience showed was just below the amount on which the patient increased in weight. She gained on 1200 and lost on 1000, consequently the diet was restricted to an average of 125 gm. of albumin, representing 514 calories; 32 gm. fat, or 300 calories, and 49 gm. carbohydrates, or 200 calories, a total of 1014 calories a day. No restriction was imposed on the amount of water and green vegetables were allowed in abundance. The ration for one day, for example, was 400 gm. coffee, without milk or sugar, 80 gm. graham bread, 200 gm. roast pork, 80 gm. boiled ham, 500 gm. tea, without milk or sugar, 80 gm. Schweizerkäse and 400 gm. cucumber salad. Stadelmann believes that thyroid treatment of obesity is dangerous and superfluous, as equally good if not superior results can be attained by underfeeding, adapting the number of calories to the individual case, and varying the proportions of fats and carbohydrates from time to time to make the diet more acceptable to the patient. Even at the best, the treatment of obesity is a severe strain on the patience and will-power, and the physician's strict and constant oversight is needed.

Arrhythmia in Fatty Degeneration.—Kisch states that the probable reason why intense arrhythmia is noted in one case of fatty degeneration of the heart, while the heart action is still regular in other cases in which the degeneration of the myocardium is equally pronounced, is that in the former case, the nervous apparatus of the heart is affected, directly or indirectly, by the morbid process. This extreme, persisting arrhythmia is always an ominous sign, he says, indicating heart failure liable to occur at any moment in consequence, possibly, of some very slight oxerexertion or increased resistance in the vessels. It may be the first indication of latent fatty degeneration of the heart in persons inclined to fat, and should rouse the physician to energetic measures directed to the relief of the task imposed on the heart, and to aid the recuperation of the degenerated myocardium. Kisch is physician at Marienbad and he states that he has been able to prolong life and relieve the patients in many apparently doomed cases. He illustrates typical tracings, in such cases, in the *Wien. Med. Woch.*, of May 25. They are distinguished by the alternation of a number of regular pulse waves with a few small, rudimentary waves, and, possibly, occasional pauses. Or the regular waves may occur irregularly between abnormally large, protracted waves and the rudimentary. The pulse may be retarded or accelerated.

Correspondence.

American Humane Association.

Toledo, Ohio, Oct. 3, 1901.

To the Editor:—My attention has just been called to your long editorial in The Journal of September 14, wherein, among other things, you question the accuracy of my statements. Your sense of fairness, I doubt not, will permit me to make, through your columns, a brief reply.

Referring to the pamphlet "Concerning Human Vivisection" issued by The American Humane Association, you say:

"If the Association had really desired to put the matter fairly before the public, why did it not include Dr. Keen's last letter? If it had done this, the anonymous reviewer would have had an opportunity to point out the 'serious misquotations' spoken of by Mr. Brown in his recent communication, if they existed, a possibility of which we have our doubts. A writer who . . . leaves an important term like '*carcinoma dissemine*' in the original rather than put it into intelligible English is not one that inspires faith in his criticisms or the accuracy of his assertions."

1. The answer to your first question is easy enough. The pamphlet "Concerning Human Vivisection" was published at least three weeks before Dr. Keen's "last letter" appeared in your columns; its introduction is distinctly dated July 1, 1901. How could Dr. Keen's letter of August 10 appear in a pamphlet printed and in circulation in the preceding month?

2. The important term "carcinoma dissemine" does not appear in the *Review*, except as embodied in a long letter from the special correspondent of *The British Medical Journal*. Doubtless he will appreciate your criticism; but I fail to see why his language should have been changed, or why his fail-

ure to translate a perfectly intelligible phrase should inspire doubt as to the accuracy of his assertions.

3. You doubt the possibility of my pointing out in Dr. Keen's letter any serious misquotations. Will The Journal grant me the space to prove it? If so, the proof of his garbled quotations shall be furnished. But in his interest, I protest against being called upon to furnish them in your columns.

4. Speaking of Animal Vivisection, you say that "the courageous application of the facts thus gained on human subjects falls fairly within what Mr. Brown . . . would call "human vivisection." Not at all! Evidently, you are entirely ignorant of what The American Humane Association means by the term. It was thus defined on the first page of the original pamphlet: "The phrase 'Human Vivisection' must not be taken as having any reference to the experimental use by physicians of new methods or new remedies, with a view to the benefit of the patient. To such tests, in the vast majority of instances, there can be no objection. But 'human vivisection' is something entirely different. It has been defined as 'the practice of subjecting human beings, men, women, and children, who are patients in hospitals or asylums, to experiments involving pain, mutilation, disease or death, for no object connected with their individual benefit, but entirely for scientific purposes."

5. You state regarding unjustifiable experiments on human subjects, that there have occurred "a few rare instances of the kind, that were promptly condemned by the profession generally, long before The Humane Association ever paid any attention to the subject." I am very glad to know this upon your authority. If now, you will kindly quote from your own periodical, a single case in which an experimenter of this kind has been, by name, condemned or censured in your editorial columns since The Journal came into existence, I shall be glad to give your words that wide publicity which they deserve, as illustrating the attitude of the medical profession towards this atrocious practice. Yours very truly,

James M. Brown,
President American Humane Association.

Ans.—The Journal received the pamphlet in question about five weeks after the publication of Dr. Keen's last letter. We have not been accustomed to consider the date on the introduction as the date of printing of a work, and, supposing we had been promptly furnished with a copy, it was not unjustifiably assumed that its producers had had time to see The Journal of August 10 and include the latest statement of Dr. Keen. Anyone can put any date he pleases on the preface to a pamphlet; it is no evidence of the time of a book's appearance. We repeat that it would have been better for their pretense of fairness if The Humane Association had held back their pamphlet, if necessary, a few days to present also this last letter.

As regards the retaining the term "carcinoma dissemine" instead of putting it into English, it might do in a medical journal, though it looks pedantic, but, whether in a quotation or not, it ought not to be left without explanation in a pamphlet addressed to the laity. It disguises, so to speak, the facts in the case, that the patient suffered from generalized cancerous infection. While not approving of the procedure we can not say that auto-inoculation in such a case had any more effect on the feelings of the patient or the prognosis of the case than there would be in general leprosy, or from the addition of another pustule in a case of discrete variola. That, however, is evidently not the impression intended to be conveyed by The Humane Association's writer and he refrains from any explanation of the term, though, if he is at all familiar with medical terms, he must have been aware of the very possible trifling nature of the operation. The term as used by him can not be said to be "perfectly intelligible" to the average reader.

Dr. Keen, who is now in Europe, is perfectly able to take care of himself and one may reasonably doubt Mr. Brown's word that he has made any serious misquotations or that Mr. Brown is likely to want to spare him any exposure of them if he can do it. We may also be reasonably excused from giving any space to those who garble extracts and excuse deliberate misrepresentations under the plea of "free translation." As regards our alleged misapprehension and ignorance of what is meant by human vivisection, we shall hold our position. In fact, according to the definition given, hardly one of the cases of alleged human vivisection cited could be said to have been done entirely for scientific purposes; there was a therepeutic end in view in nearly every one, if not all. This does not, of course, justify the infliction of needless suffering, or criminal recklessness.

The Journal has editorially condemned human experimentation in the past as it does at the present, but it can not approve of exaggeration and misrepresentations or the attempted inference that it is not condemned by the medical profession. That this is not the case is shown by the fact that The Humane Association's anonymous writer has to quote such condemnation, though he apparently tried to avoid it, as in the case noted by Dr. Keen. The impression conveyed to disinterested laymen by his article is shown by an editorial in the *New York Evening Post* which sees in it "not an answer to Dr. Keen's specifications, but an attempt to hold him responsible for things he has not said or done. It puts him in the attitude of exonerating physicians who have been charged with experiments producing unnecessary pain upon poor and helpless patients in hospitals. No impartial reader will derive such an impression from anything he has said." We do not see the utility of further lending our columns to those whose main object appears to be the libeling of the medical profession, through garbled quotations and direct misrepresentation by an anonymous writer.

The Banquet to Dr. N. S. Davis.

Hartford, Conn., Oct. 12, 1901.

To the Editor:—The testimonial banquet to Dr. Davis, so warm and appreciative in its recognition of his great service to medicine, and to medical men, failed to note the real monument which he has been building for the future.

The recent great advances of science have pointed out the wisdom and prescience of the persistent and insistent efforts of Dr. Davis to make known the dangers from the use of alcohol. For nearly half a century from laboratory and clinical experience he has called attention to the errors and delusions which have invested the alcoholic problem.

Dr. Rush, the great physician of the last century, is more often quoted to-day and is more vividly remembered for his statements of the nature of alcohol and the diseases which follow than for any other work he did.

Condelac, a noted French philosopher of the eighteenth century, is unknown to-day; his name is rarely mentioned except as having urged that inebriety was a disease and curable.

History has many similar examples of prominent men in their day whose memory was only known to the future by what they said regarding some unpopular subject, which later was recognized as a great truth. It is this work of the recognition and defense of great facts which are denied at the time, that make such men the pioneers. These men open up new territory and mark out paths for larger truths in the future. There can be no doubt that the great impending alcoholic problems of this new century will refer back to the efforts of a few men of which Dr. Davis is the great leader, and who, like scouts, far in advance of the army of scientific progress, indicate the direction and line of march.

A host of friends all over the country extend to Dr. Davis their heartiest greetings and confident assurance that his name and reputation is not limited to this day and generation.

T. D. Crothers, M.D.

Laxity in Pension Examiners.

Bloomsburg, Pa., Oct. 10, 1901.

To the Editor:—In an article in The Journal of October 5 on "Laxity in Pension Examiners," the claim is made of "certain abuses" of "serious carelessness," and that the public has "a conviction of a vast amount of fraud in the pension business," and that the publication of such facts as these confirm it. Let us examine the alleged facts. If they are true, then the above allegations stand. If they are false, then they fall. The "facts" consist of an experience with one board of pension examiners, who examined twenty applicants at once, from one section and found them all suffering from heart disease. These applicants were then examined before disinterested physicians who found no heart disease in any of the cases. Is this probable? Is it possible, that twenty soldiers aged from 55 to 75 years, who have suffered all the privations of army life, and subsequently the most of them the hardships of severe manual labor in attempting to maintain their loved ones, that not *one* had heart disease? I doubt if it is possible to take twenty men with *no* army experience between the ages of 55 and 75 years and not find one with heart trouble.

The sentiments of your article are so similar to others recently published, as to excite the suspicion of a common inspiration. Many of your subscribers are pension examiners. Were you to obtain their experience as to the prevalence of heart disease among pensioners it would go far towards establishing the question as to who is right in the controversy between the Commissioner of Pensions and the Grand Army.

J. J. Brown, M.D.

A Medical Weekly Criticised.

Pawtucket, R. I., Oct. 2, 1901.

To the Editor:—I am glad you noticed the editorial of a certain medical journal reflecting upon the physicians who attended our late lamented President.

It is a deplorable state of affairs when a journal that should be cautious and dignified, rushes into print editorially with a hysterical attack upon the good name of our profession backed by nothing but hearsay. The proceeding was a disgrace to journalism and if I were a subscriber of this weekly I should consider it a duty to myself and my profession to refuse to accept it in the future.

According to certain "yellow newspapers" this medical publication is the "mouthpiece of the profession." Where those poor deluded scribes got the information I can not imagine, but sufficient to say they never heard of the American Medical Association or The Journal, or of a number of other favorably known medical journals, for if they had, reckless as these men are, I believe they would hesitate before writing such a glaring misstatement.

I believe that a medical journal that assumes such an attitude toward the profession is unworthy of support. The editorial not only reflected upon the gentlemen immediately concerned in this case, but upon the whole profession, and while this editorial was inconsistent and absurd to the professional mind, it certainly made the profession ridiculous to the lay mind.

Yours very truly,
Francis M. Harrington.

The Septic Tank.

Chicago, Oct. 9, 1901.

To the Editor:—In The Journal of September 28, the City Clerk of Vancouver, B. C., states in a very positive way that the City of Vancouver was the first to introduce the Septic Tank System into the Dominion. This is an error. The first septic tank system to be introduced in the Dominion of Canada was installed at the Mount Allison University, Sackville, N. B., and was put into practical operation in October, 1900.

I should perhaps explain that, as general agent for the septic tank syndicate at Exeter, England, I secured the introduction of this system, both at Vancouver and Sackville, and on March 12, 1901, I received a letter from Dr. Allison, President of the University, reporting the very satisfactory working of our system. In the interest of your readers, perhaps you would like to get a later report from the Doctor, which I think he would be very glad to give you, but in justice to Dr. Allison I think Dr. McGuigan's statement should be corrected.

Yours very truly, H. D. Wyllie,
General Manager Cameron Septic Tank Co.

A Warning.

Philadelphia, Oct. 12, 1901.

To the Editor:—I desire to warn the profession against the operations of the Merchants' and Physicians' Adjusting Agency, of 346 Broadway, N. Y. Their scheme is to agree by written contract to collect bills for two years for $25, half of the first $50 collected. The doctor must bind himself to send every 20 days for five times, twice as many stamps as the number of debtors to whom letters will be sent. The point here is that if the physician should forget to send the stamps within the time mentioned, such is the wording of the contract, that he must forfeit $25 and risk hearing nothing more about his accounts. Should he refuse to pay, they threaten and demand a promissory note as the only concession. The nefarious trick is quite obvious.

H. S. Anders, M.D.

Gangrene Complicating Pregnancies.

Austin, Texas, Oct. 11, 1901.

To the Editor:—For the benefit of the statistic-pathologist, allow me to report that several years ago, a primipara, of this city, lost one of her feet, and part of the ankle, as a result of gangrene, complicating parturition. The patient fully recovered, and has since borne five healthy children, all of whom are now strong and well. Personal observations lead us to believe that such complications are not so rare, or so fatal, as many writers would have us to believe.

Q. C. Smith, M.D.

New Instrument.

A SIMPLE MECHANICAL DEVICE TO PREVENT THE MISCOUNT OF SPONGES.

Miss Zell Converse, Graduate Nurse.
COLUMBUS, OHIO.

The unfortunate accident in a Columbus hospital a few years ago, and the universal expression of trained nurses as to the responsibility assumed by them in accounting for the sponges used, impresses upon the mind of the writer not only the convenience and value, but the almost absolute necessity of some arrangement which would render a miscount impossible.

The following described simple device then came to mind, and was suggested to one of our leading surgeons, who has since used it both in hospital and private practice; in a published report he speaks of it as devoid of complications and in every way eminently satisfactory. Any ordinary table may be used, but one at least 36 inches in length and a little wider than is necessary to hold two sponge basins, will be found most convenient. To this is attached at the back of the top an upwardly inclined surface about 36x36 inches with three hooks, one at each upper corner and one in the center from which the unfolded package of sponges is suspended.

The sponges are made of surgeon's gauze in two sizes; one size 9x9 inches, and the other, 12x12 inches. Each package is made up of a piece of muslin or cotton flannel, measuring 30x36 inches and divided by colored threads into squares, three of which are 12x12 inches, and the eight remaining, 9x9 inches. Colored thread run in by machine easily marks the squares. Three loops of tape, one at each upper corner and one in the center of the muslin, are for suspending from the hooks on the table. To each square a sponge is lightly caught by a very fine thread at each upper corner—indicated by dots in the diagram. The muslin is then folded upon itself, rolled up and sterilized. At the beginning of the operation the sterilized package is unrolled and suspended by the loops of tape from the hooks upon the inclined surface at the back of the table, where the nurse and everyone present can, at a glance, see that each square is occupied by a sponge. If the unbleached muslin is used the difference in color in the muslin and the sponge would make the absence of a sponge the more quickly detected. The sponges being so lightly attached are then easily removed to the basins. When the time comes for counting, the nurse quickly wrings out and places each sponge in its space on the muslin. This takes no longer than to count them over and if each space is occupied, as in the beginning, the surgeon, nurse, and others present see that there can be no mistake and there need be no further anxiety.

The inclination of the surface and the sponges now being wet makes them adhere without other attachment. No loose sponges should be allowed in the operating room, and ordinarily, not more than one package will be needed if the sponges are washed and returned as needed to the surgeon by the nurse. A number of these packages, however, should be on hand, and for those cases in which it is not best to return the sponges, as many can be used as necessary by simply hanging a second and third package over the first. In such cases, it is best when counting, to fill the spaces on the last or top piece of muslin, roll them up and remove them from the table, then fill the next and so on. In regard to asepsis there need be no fear of using a sponge after accounting for it, as placing them on the already sterilized muslin keeps them still surgically clean.

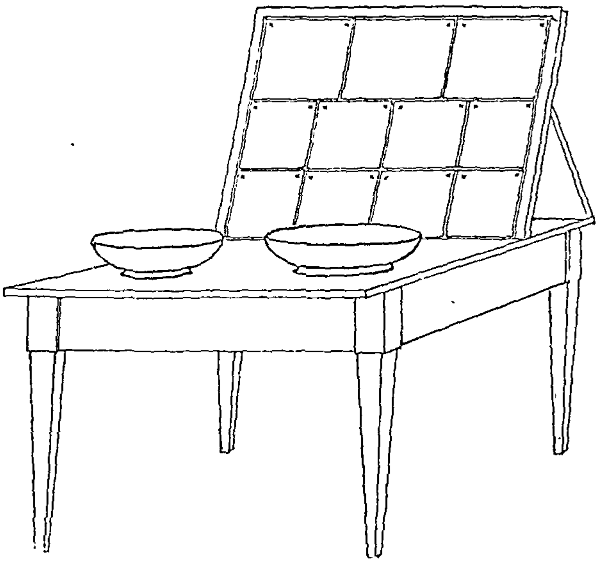


Table with sponges and basins ready to begin operation.

441 East Town Street.

Association News.

New Members.

New members for the month of September, 1901:

ARKANSAS.

Kittrell, T. F., Texarkana.
Connell, W. H., Hot Springs.

CONNECTICUT.

McMaster, G. T., New Haven.

DISTRICT OF COLUMBIA.

Bishop, F. B., Washington.

GEORGIA.

Goodrich, W. H., Augusta.

ILLINOIS.

Schaller, G. J., Chicago.
Shaff, J. N., Alton.
Kercher, J., Chicago.
Bartlett, E. P., Springfield.
Stuttle, A. L., Williamsville.

IOWA.

Dwelle, E. H., Northwood.
Patrick, F. DeW., Burlington.
Miller, W. J., Wilton Junction.
Horton, C. D., Fort Atkinson.
Pringle, J. A., Bagley.

INDIANA.

Hupe, Chas., Lafayette.
Kennedy, Sam'l, Shelbyville.
Tucker, F. A., Noblesville.

KANSAS.

Milligan, J. A., Garnett.
Whitfield, R. J., Fort Scott.

KENTUCKY.

Dowden, A. P., Eminence.
O'Bannon, J. B., Mt. Carmel.

MASSACHUSETTS.

Whitaker, C. W., Worcester.

MARYLAND.

Lamar, A. A., Middletown.
Johnson, J. A., Easton.

NEW JERSEY.

Mooney, J. J., Jersey City.
Kipp, C. J., Newark.
Hall, W. J., Trenton.

NEW YORK.

Oppenheimer, N., New York City.
Edmister, F., Brooklyn.
Steinke, H. C. O., Brooklyn.
Wahlig, H. G., Sea Cliff, L. I.
Shannon, Wm., New York City.
Jeffries, F. M., New York City.
Welzmiller, L. R., New York City.

PENNSYLVANIA.

Roe, W. J., Philadelphia.
McCulloch, D. C., Allegheny.
Lytle, F. P., Birdsboro.

RHODE ISLAND.

Williams, Pearl, Providence.

TEXAS.

Carroll, R. S., Calvert.
Ward, W. Y., Duplex.
Peters, O. K., Galveston.
Comer, C. C., Carthage.

TENNESSEE.

Bryan, D. H., Monteagle.

WASHINGTON.

Mohrmann, Emil, Roslyn.

WISCONSIN.

Moody, Lewis, West Superior.
Treat, C. R., Sharon.
Wadey, B. J., Belleville.

Married.

Jacob F. Brenckle, M.D., Kulm, N. Dak., to Miss A. Boll, at Milwaukee, Wis.

John M. Conley, M.D., to Miss Beatrice M. Roche, both of Oshkosh, Wis., October 1.

Daniel S. Heyn, M.D., to Miss Stella Obendorfer, both of Cincinnati, Ohio, October 7.

William D. Sumpter, M.D., to Miss Tommie Wrenne, both of Nashville, Tenn., October 10.

James Edward Poore, M.D., to Miss Lady Pearl Payseur, both of Lancaster, S. C., October 10.

Claudius W. West, M.D., White Rock, Nev., to Miss Ethel M. Egan, Galesburg, Ill., October 7.

Joseph W. Anderson, M.D., Pittsburg, Pa., to Elizabeth S. Jarrett, M.D., Norristown, Pa., October 3.

Charles H. Clark, M.D., Washington, D.C., to Miss Cora Esther Taggart, Massillon, Ohio, October 17.

Gustave A. Petersdorf, M.D., Indianapolis, Ind., to Miss Golda F. Hunter, Memphis, Tenn., October 3.

Louis Albert Aldridge, M.D., to Miss Amelia Catherine Engel at New Windsor, Carroll Co., Md., September 26.

Deaths and Obituaries.

Richard S. Griswold, M.D., Bellevue Hospital Medical College, New York, major and surgeon, U. S. Volunteers, assigned to the Ninth U. S. infantry, was killed at Samar, Philippine Islands, while on duty with a company of that regiment, aged 31. Dr. Griswold, after his graduation served as assistant to the late Dr. Melancthon Storrs, Hartford. He served as assistant surgeon of the First Connecticut Infantry, U. S. V., during the Spanish-American war, and soon after its close, he passed the examination and was appointed assistant surgeon of Volunteers with the rank of first lieutenant, being assigned to the Twenty-sixth Infantry, U. S. V. While on sick leave he went from Manila to China and was present at the capture of Tien Tsin with the Ninth U. S. Infantry, and was commended in dispatches. In June, 1891, he was appointed major and surgeon of Volunteers, returned to Manila and served with the Ninth U. S. Infantry until his death. He was a member of the Hartford Medical Society.

Frederic C. Winslow, M.D., Northwestern University Medical School, 1874, died suddenly in Chicago, October 10. After his graduation he practiced in Jacksonville, Ill., and was for eighteen years assistant superintendent of the Central Hospital for the Insane at that place. After leaving that position he conducted a private sanatorium until appointed by Governor Tanner superintendent of the State Hospital. Governor Yates recently appointed him superintendent of the Hospital for the Incurable Insane, Bartonville, near Peoria. He was a member of the American Medical Association.

John R. Everhart, M.D., University of Pennsylvania, Philadelphia, 1853, died at his residence in West Chester, Pa., October 8, aged 74. After graduation he studied in Paris, and at the outbreak of the Civil war became surgeon of the Ninety-seventh Pennsylvania Infantry. To his vigorous treatment and extreme care in the enforcement of sanitary regulations was due the control and final conquest of yellow fever among the troops stationed, in 1862, at Hilton Head, S. C. After the close of the war he traveled extensively and wrote several books on travels.

Rezin P. Johnson, M.D., an old resident and practitioner of Canton, Ohio, died in Chicago, where he had resided since his retirement from practice in 1890, October 9, from typhoid fever, aged 62. He was graduated in 1861, and at once entered the United States service, serving throughout the war as assistant surgeon of the One Hundred and Fourth Ohio Volunteer Infantry.

Frank H. Cilley, M.D., University of Vermont, Burlington, 1874, who practiced in Barnet, Vt., for seven years and in Jericho for thirteen years, died, October 3, at the Mary Fletcher Hospital, Burlington, after an illness dating back to an injury received in a railway accident eight years previously, aged 54.

Alexander G. McRae, M.D., Bellevue Hospital Medical College, New York, 1891, was found dead in the basement of his home in Calumet, Mich., October 9. His death was caused by an electric shock. He was 36 years of age, and was resident physician for the Osceola Mining Company.

John S. Bloomington, M.D., Rush Medical College, Chicago, 1870, who practiced medicine for a time and then became interested in life insurance, and founded and edited the *Investigator* in 1874, died at his home in the Hotel Del Prado, Chicago, October 3, from pneumonia, aged 58.

O. Cyrus Kendrick, M.D., Jefferson Medical College, Philadelphia, 1848, formerly in charge of the State Hospital for the Insane, Newburgh, N. Y., and for several years a practitioner in East Cleveland, Ohio, died at his residence in East Cleveland, October 8, aged 79.

Ernest H. Hoffmann, M.D., Washington University, St. Louis, 1861, a pioneer practitioner of Omaha, who served throughout the Civil war as surgeon at Jefferson Barracks, Mo., died from angina pectoris at his home in Omaha, October 8, aged 65.

Ruffin B. Ellis, M.D., University of Pennsylvania, Philadelphia, 1866, one of the oldest and most esteemed practitioners of Raleigh, N. C., died at his home in that place from the effects of a paralytic stroke, October 2, aged 68.

Thomas J. Babb, M.D., Medical College of the State of South Carolina, Charleston, 1848, died at his home, Cherry Creek, Miss., October 8. He had practiced medicine in Pontotuc County for more than half a century.

Henry K. Hershiser, M.D., Columbus (Ohio) Medical College, 1881, one of the oldest practitioners in Seneca County, Ohio, died at his home in Tiffin, October 8, from paralysis, after an illness of two weeks, aged 71.

M. Garst, M.D., Jefferson Medical College, Philadelphia, 1837, formerly a practitioner in Dayton, O., and Champaign, Ill., died at his home in Coon Rapids, Iowa, October 5, after a short illness, aged 86.

Joseph E. Barrett, M.D., University of Michigan, 1861, a prominent physician of Wooster, Ohio, and surgeon of the Twenty-third Ohio Infantry in the Civil war, died at his home, October 3, aged 68.

George C. Mathews, M.R.C.S., Ireland, and M.R.C.P., Edinburgh, Scotland, 1871, a prominent physician of Jacksonville, Fla., died at his home in that city, October 1, after an illness of five days, aged 52.

Richard H. Burke, M.D., Rush Medical College, Chicago, 1883, formerly a resident of Watertown, Wis., but of late years a practitioner of San Jose, Cal., died at Los Angeles, Cal., October 4, aged 45.

E. H. Edwards, M.D., Medical College of the State of South Carolina, Charleston, 1856, died at his home in Due West, S. C., October 1, after an illness of two months, from blood poisoning.

Charles W. Petty, M.D., University of Vermont, Burlington, 1871, of Keeler's Bay, Vt., died suddenly from heart disease while making a professional call at Grand Isle, October 5, aged 53.

Everett B. McKinley, M.D., Starling Medical College, Columbus, Ohio, 1883, died from the effects of carbolic acid, taken in error, October 7, at his home in Vaughnsville, Ohio, aged 55.

John F. Gudgel, M.D., Kentucky School of Medicine, Louisville, 1879, died at his home in Hazleton, Ind., where he had lived for 27 years, October 5, after a long illness, aged 51.

Alfred R. Allen, M.D., University of Vermont, Burlington, 1882, was found unconscious near his home in Parishville, N. Y., October 7, and died without regaining consciousness.

Henry Simmons White, M.D., College of Physicians and Surgeons, N. Y., 1866, once an assistant surgeon, U. S. A., died at his home in Red Bank, N. J., September 29, aged 56.

Torrey T. Prestigar, M.D., Keokuk (Iowa) Medical College, 1894, St. Louis College of Physicians and Surgeons, 1895, died at his home in Sioux City, Iowa, October 5.

Alfred C. Lemberger, M.D., Louisville Medical College, 1893, died suddenly in his office in Louisville, on the morning of October 5, from heart disease, aged 34.

William Ullrich, M.D., a retired practitioner, who had been in feeble health for several years, died at his home in Waukesha, Wis., September 26, aged 83.

George W. Christian, M.D., University of Alabama, Mobile, 1873, died in his office in Austin, Texas, October 6, from the effects of chloroform, self-administered.

William A. Hadley, M.D., Meharry Medical College, Nashville, Tenn., 1880, a colored practitioner and teacher, of Nashville, died from apoplexy, October 7.

Alfred T. Cherry, M.D., Bellevue Hospital Medical College, New York City, 1890, of Huntington, W. Va., died suddenly at Oakland, Ky., October 6.

Herbert H. Flagg, M.D., Jefferson Medical College, Philadelphia, 1881, died at his home in Springfield, Mass., from diabetes, October 1, aged 51.

Thomas R. Walker, M.D., College of Physicians and Surgeons, New York, 1853, died at his home in Louisville, Ky., October 1, aged 73.

Hule G. Magee, M.D., Tulane University, New Orleans, La., 1883, was shot and instantly killed in a dispute at Magee, La., September 30.

Herbert J. Hale, M.D., Detroit Medical College, 1875, died at his home in Grass Lake, Mich., from consumption, October 1.

Societies.

COMING MEETINGS.

New York State Medical Association, New York City, Oct. 21-24, 1901.

Medical Society of Virginia, Lynchburg, Nov. 5-7, 1901.

Oklahoma Territory Medical Association, Oklahoma City, Nov. 13, 1901.

Southern Surgical and Gynecological Association, Richmond, Va., Nov. 19, 1901.

Western Surgical and Gynecological Association, Chicago, Dec. 18-19, 1901.

Jacksonville (Ill.) Medical Club.—This organization held its annual meeting, October 5, and elected Dr. Edward Bowe, president; Dr. William K. McLaughlin, vice-president; Dr. David W. Reid, secretary, and Dr. Henry C. Campbell, treasurer.

Lake County (Ohio) Medical Society.—The physicians of Painesville and surrounding towns met at the former place, September 27, and organized a county society, with Dr. David J. Merriman, Painesville, president, and Dr. H. M. Osborne, secretary.

Minnesota Academy of Medicine.—The fifteenth annual meeting of the Academy was held in Minneapolis, October 2. Dr. John T. Rogers, St. Paul, was elected president; Dr. John W. Little, Minneapolis, vice-president, and Dr. Richard O. Beard, Minneapolis, secretary and treasurer.

Perth Amboy (N. J.) Medical Society.—The physicians of Perth Amboy met September 28 and organized a medical society, with the following officers: Dr. John G. Wilson, president; Dr. H. Martyn Brace, vice-president, Dr. Frank C. Henry, secretary, and Dr. William E. Ramsey, treasurer.

Montgomery County (Ill.) Medical Society.—The annual meeting of this Society was held in Hillsboro, October 1. Dr. William H. Cook, Coffeen, was elected president; Dr. Jeremiah C. Wilson, Donnellson, vice-president, and Dr. Joseph M. Trigg, Farmersville, was re-elected secretary and treasurer.

Walla Walla Valley (Washington) Medical Society.—At the meeting of this Society at Walla Walla, September 17, a committee was appointed to memorialize the City Council toward passing an anti-expectoration ordinance. Dr. Yancey C. Blalock was elected secretary of the Society, vice Dr. Smith S. Johnson, resigned.

Harrison County (Texas) Medical Society.—The medical men of the county met at Marshall, September 25, and organized this Society with the following officers: Dr. Samuel F. Vaughan, Jonesville, president; Dr. James H. Taylor, Marshall, vice-president; Dr. Holman Taylor, Marshall, secretary, and Dr. Charles E. Heartsill, Marshall, treasurer.

Fulton County (Ill.) Medical Society.—At the fourth annual meeting of this Society, held in Canton, October 2, the following officers were elected: Dr. Perry H. Stoops, Ipava, president; Drs. William R. Roberts, Norris, and William S. Strode, Lewistown, vice-presidents; Dr. David S. Ray, Jr., Cuba, secretary, and Dr. Frank M. Harrison, Bryant, treasurer.

International Congress of Family Assistance.—Casimir-Perier and T. Roussel have organized an international conference to discuss the details of placing convalescents, mild insane subjects, etc., in families, boarding them in healthy communities, instead of housing them in institutions. There are to be four sections in the congress which convenes at Paris, October 27.

San Angelo District (Texas) Medical Society.—Through the efforts of Dr. Robert L. Greene, San Angelo, this Society was organized, September 28, with the following officers: Dr. Samuel L. S. Smith, San Angelo, president; Drs. Boyd Cornick, Knickerbocker, and Fred F. Tucker, San Angelo, vice-presidents; Dr. Robert L. Greene, San Angelo, secretary, and Dr. Bascom Lynn, treasurer.

French-American New England Medical Association.—In connection with the congress of French-Americans at Springfield, Mass., a medical association was organized with about 200 members on its initial roll, and the following officers were elected: Dr. J. Hector Palardy, Fitchburg, president; Dr. George T. Lamarche, Springfield, secretary and treasurer, and Dr. Henry E. Chaput, Holyoke, corresponding secretary.

Southwestern Tri-State Medical Society.—This Society, composed of members from Texas, Oklahoma and Indian Territory, met at Dallas, Texas, October 1 and 2, for its second annual meeting. The following officers were elected: Dr. John S. Turner, Terrell, Texas, president; Drs. George W. West, Eufaula, I. T., Lawrence T. Smith, Lexington, Okla., and William R. Thompson, Fort Worth, Texas, vice-presidents, and Dr. John O. McReynolds, Jr., Dallas, Texas, secretary and treasurer.

Jersey County (Ill.) Medical Society.—This Society, after a disbandment of several years, was reorganized September 26, at Jerseyville, with the following officers: Dr. John S. Williams, Jerseyville, president; Dr. Jasper Tidball, Grafton, vice-president, and Dr. Augustus K. Van Horne, Jerseyville, secretary and treasurer. The Society was organized in 1856, with Dr. E. A. d'Arcy as president. Dr. A. K. Van Horne, the present secretary, is the only surviving physician who was present at the organization in 1856.

Greene County (Ohio) Medical Society.—The regular meeting of this Society was held at Xenia, Ohio, October 3. Pursuant to the circular letter recently sent out by the American Medical Association, the Society, by unanimous vote, endorsed the laudable efforts being made to cement the medical profession into a united whole. Believing that a National Board of Health, whose head is a cabinet officer, should be instituted, resolutions were adopted lending its encouragement and influence toward accomplishing that end.

Thurber Medical Association.—The forty-eighth annual meeting of this Association was held at Milford, Mass., October 3. The president, secretary, and Dr. William L. Johnson, Uxbridge, were chosen as a committee to represent the Association in connection with the proposed Milford hospital. The following officers were re-elected: Dr. Nathaniel C. B. Haviland, Holliston, president; Dr. Ralph C. Fish, Hopedale, vice-president; Dr. John M. French, Milford, secretary; Dr. Le Grand Blake, Milford, treasurer, and Dr. Christopher D. Albro, Milford, librarian.

Wayne County (Mich.) Medical Society.—This Society held its thirty-sixth annual meeting at the Griswold House, Detroit, October 3. After the meeting the members present became the banquet guests of the retiring president, Dr. John J. Mulheron, who also acted as toastmaster. He reviewed the history of this, the oldest medical society in Michigan, and incidentally argued strongly for the benefit accruing to both the individual and the profession as a whole from active participation in society work. He advocated the publication of a quarterly journal by the Society, and the matter was referred to a committee for consideration. The following officers were elected: Dr. Samuel Bell, president; Dr. Charles C. Yarborough, vice-president; Dr. C. Henri Leonard, treasurer, and Dr. Hugh Mulheron, secretary.

Oregon State Medical Society.—The twenty-eighth annual meeting of this Society was held in Portland, September 25, 26 and 27. The attendance was large, and several prominent physicians from San Francisco, Chicago and Baltimore were present and read papers. The committee appointed to consider the resolution offered by Dr. George F. Wilson providing for the reorganization of the state society on the lines of the American Medical Association, reported that an amendment to the constitution of the state society was necessary to accomplish that end, and that such an amendment had to be offered *one week prior to the meeting of the society*. It was recommended, however, that a delegate and alternate to the National Association be elected. The report was adopted and Dr. Andrew C. Smith, Portland, was elected delegate and Dr. Edward P. Geary, alternate. The election of officers resulted as follows: Dr. Charles J. Smith, Pendleton, president; Dr. Walter T. Williamson, Salem, vice-president; Dr. Alexander D. Mackenzie, Portland, secretary, and Dr. William F. Amos, Portland, member of executive committee.

Utah State Medical Society.—The seventh annual meeting of this Society was held in Provo, October 1 and 2. President John W. Aird, Heber, in his address recommended that the State Society co-operate with the American Medical Association in an effort to unite more closely the medical profession of the United States. He stated that it would be necessary for the State Society to reorganize, so as to make it possible to amalgamate with the national society, and he recommended the election of three members as a committee on reorganization. Drs. John W. Aird, Heber; Andrew J. Hosmer, Salt Lake, and J. C. Elliot King, Salt Lake, were appointed as this committee, and the secretary was instructed to notify the county societies of the contemplated change in organization. A resolution presented favored the establishment of a psycho-physical laboratory by the Department of the Interior. Salt Lake City will be the place of meeting, and the date was changed from the first Tuesday in October to the second Tuesday in May, to conform to the time of meeting of the American Medical Association. The election of officers resulted as follows: Dr. Ira A. E. Lyons, Salt Lake, president; Drs. Philo E. Jones, Salt Lake, and Robert E. Steele, Lehi, vice-presidents; Dr. James N. Harrison, Salt Lake, treasurer, and Dr. George E. Robison, Provo, secretary.

CINCINNATI ACADEMY OF MEDICINE.

Regular Meeting, held September 30.

President Dr. N. P. Dandridge, in the Chair.

Dr. M. L. Heidingsfeld presented two patients of advanced age, who had been suffering from facial epithelioma, but who were now entirely well under local applications of arsenic. He also gave a lantern-slide exhibition showing numerous cases of ignored syphilis.

Excision of the Ileo-Cecal Valve; Tubercular Peritonitis.

Dr. B. Merrill Ricketts presented a patient, a male, aged 28, who had been suffering from partial obstruction of the bowels for eight months. The abdomen was opened on the right side. The ileum was seen to be enormously distended, being fully the size of the cecum; a diverticulum also existed, extending from the cecum, about five inches long and an inch in diameter. The occlusion evidently existed in the valve and the most expedient thing seemed to be the excision of this valve, which was done and an end-to-end anastomosis made with silk sutures. Death occurred ten hours later from exhaustion. Examination of the specimen showed enormous thickening and infiltration of the intestinal membranes constituting the so-called ileo-cecal valve, while both the mucous and serous membranes were studded with small miliary tubercles. Specimen exhibited. Dr. Ricketts also presented a case of multilocular ovarian cyst in a woman of 70, four cases of hematoma of the ovary, a case of purulent salpingitis, and twelve appendectomies, the latter all recovering.

Congenital Elevation of the Scapula.

Dr. Albert Freiberg reported this case: Patient aged ten months. From birth the mother had noted a protrusion over the left collar-bone and that the left side of the child's neck seemed to be much shorter than the right. On examination the neck contours were found to be altogether asymmetrical, but there was no scoliosis. The left scapula was much smaller than the right and evidently elevated. The inferior angle appeared to be about four cm. above the right; the superior angle projected well above the clavicle, indeed was practically subcutaneous. The coracoid process was felt below it and was on a higher plane than the corresponding process of the right side. Passively the scapula was easily moved with the arm, and both actively and passively all movements of the shoulder other than abduction were normal; abduction was limited to ninety degrees. The scapula did not appear to possess any abnormal attachment to the spine, but appeared to be tilted upon its vertical axis in such a way that the superior angle approached more nearly the median line. The thumb of the right hand was unusually small and was not moved to any great extent. Otherwise the child was well developed and nourished. He proposed to watch the child's development and at some future time to remove the superior angle of the scapula. The speaker then stated that in 1899 he had reported another case of elevation or misplacement of the scapula, congenital, in a child, in whom there was in addition a congenital scoliosis and imperfect development of the lower extremity on the affected side. As to etiology he thought it was due entirely to the maintenance that the shoulder holds during fetal life.

Intrauterine Fracture of the Tibia.

The patient, a male, aged four months, in whom from birth there had been noted a deformity of the left leg. There was no family history of deformity. The mother's labor was normal. At about the sixth month of her pregnancy, however, she remembered striking her abdomen against the stair banister, but as no symptoms appeared other than a momentary discomfort, she thought nothing more about it. The child was well developed and nourished, showing absolutely no abnormality except in the left leg. At the middle third of the leg was a hard, angular bend of almost ninety degrees, the apex of the angle presenting forward and inward, and the bone could be easily felt just beneath the skin. The left foot was five to eight inches shorter than the right, but as far as could be ascertained the foot was otherwise normally developed. The left limb was everywhere equal in circumference to the right. The diagnosis of intrauterine fracture of the tibia was made. There was no motion between fragments. Skiagraph showed a fracture of the lower fourth of the tibia. The upper fragment appears to be rounded off, the lower jagged. In May, 1900, an osteotomy was made and the correction of the deformity easily performed. Union did not begin for months, and when finally established the deformity had returned, the patient in the meantime having escaped observation. In September the child was again seen. Although he could bear his weight upon the limb the angular deformity was still very great. At this time two radiographs were made of the leg, one lying on its outer side, the other an antero-posterior view. The first of these shows that while the bones have developed in length and diameter there is no real bony union between the fragments of the tibia. It is also shown that only five tarsal bones are present, the os calcis, astragalus and three of the smaller bones, and articulation was very imperfect. The front view showed that the fibula was present in its entire length, but there seemed to have been a fracture just above the external malleolus. The lower epiphysis of both tibia and fibula seemed to be smaller than they should. The lower fragment of the tibia was seen to be bent not only forward but also outward toward the fibula. The relative size of both bones was otherwise normal. It seemed to the speaker that the case was one of intrauterine fracture of the tibia without defect of the fibula; the case was unusual in that in almost all of the hundred cases reported there was a coincident defect of the fibula as well as an absence of some of the toes or metatarsal and tarsal bones.

Dr. C. A. L. Reed presented a specimen of a large fibroid tumor of the uterus with very marked varicosity of the veins of the broad ligament so that in removing the tumor very severe hemorrhage was encountered.

Rupture of Kidney.

Dr. Joseph Ransohoff showed a radiograph of stone in the bladder of a boy 5 years of age. Not only the size and shape but the lamellæ and nucleus as well could be plainly outlined. Dr. Ransohoff also exhibited a specimen of dermoid tumor, unilocular, weighing twenty-five pounds, removed from a woman 64 years of age. The same speaker also presented two specimens of rupture of the kidney, both removed by lumbar nephrectomy. In the first case the operation had not been performed until the ninth day after injury, the man at the time apparently suffering from intestinal obstruction. In the second case hematuria appeared shortly after injury. By the third day the fever was a prominent symptom and by the fifth day the temperature had risen to 103, with a pulse of 110 to 120. In making the nephrectomy little or no hemorrhage was encountered until the kidney itself was reached, though previous to the operation there was marked swelling in the region of the kidney. The reason for this was found to be because the blood had exuded between the surface of the kidney and its capsule. The upper portion of the kidney was almost completely torn away and from the appearance of the parts it might be very readily surmised that the force of the original injury had shoved the kidney against one of the transverse vertebral processes. The first case had died very promptly after operation but the second was convalescent; during the previous twelve hours, eight days after operation, he had passed 23 ounces of urine.

Painful Stump Following Amputation.

Dr. J. C. Oliver presented this case: The original operation was at the middle third of the thigh, made about ten months ago for a railroad crush. Ten days after amputation he had commenced to suffer severe pain in the stump; often referred to the heel and toes. On operation a false neuroma was found in the cicatrix and pressed against the bone. Several inches of nerve were removed and another false neuroma was discovered and removed a little to one side. He thought that here was also represented a good example of high division of the sciatic nerve.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Fifty-first Annual Meeting, held in Philadelphia, September 24-26, 1901.

(Concluded from page 997.)

THIRD DAY—MORNING SESSION.

Encouragement of County Societies.

Dr. McConnell, New Brighton, offered a resolution recommending the personal visitation to county societies, in which there was evident lack of interest.

Dr. Koenig, Pittsburg, offered a resolution favoring the establishment of a psycho-physical laboratory in the Department of the Interior at Washington for the practical application of physiologic psychology to sociologic and abnormal or pathologic data. The resolution was accepted as read.

Dr. George Erety Shoemaker offered a resolution recommending the compulsory vaccination in schools.

Governor Stone addressed the Society, saying, "The doctors are the great levelers of society in the community. The village doctor, the 'country doctor' if you will call him, has a stronger hold on the pulse of this country than any other man in it."

President McKinley's Case.

Dr. John V. Shoemaker offered a resolution that it was the sense of the Medical Society of the State of Pennsylvania that the physicians and surgeons in attendance upon our late Chief Executive, William McKinley, acted in accordance with the dictates of the best medical and surgical science and that they had the full confidence of the Society.

Address in Surgery—Torsion of Arteries.

Dr. James W. MacFarlane considered the arrest of hemorrhage, particularly that by torsion. He divided torsion into two forms: limited, and free. In so far as the general public is concerned, he said, free torsion is the rule, as limited is not so advantageous. When free torsion fails primarily in a large artery, it is not limited torsion that is required, but the ligature, acupressure and perhaps the complete hemostatic armamentarium of the surgeon. In the matter of time, and the absence of danger of introduction of a foreign body into the wound, torsion is also superior. Another advantage is that an assistant is not required. Torsion in amputations was introduced into the Western Pennsylvania Hospital, Pittsburg, about 1870. Even atheromatous arteries are no bar to its use. The most probable cases in which torsion would not answer are in amputations contiguous to tissues changed by chronic inflammations. Torsion will not prevent secondary hemorrhage and the speaker cited a case in which infection occurred as the cause of secondary hemorrhage; after amputation torsion was again employed and recovery ensued. Exceptional cases were cited in which acupressure was superior to ligature or torsion.

The Operative Treatment of Bladder, Descent and Sacculation.

Dr. George Erety Shoemaker, Philadelphia, said that displacements of the bladder in the female may take place upward, backward, laterally, forward, or downward. Only in the downward direction is sacculation and imperfect evacuation liable to occur frequently, but its secondary effects are very important. He has seen but one case of pathologic forward dislocation. The various displacements with their symptoms were described. Operations above the pubis have little effect upon the bladder position if unsupported by other measures. The plan adopted by the writer was given in detail. Special attention was called to the method of taking up the redundant anterior vaginal wall and supporting the bladder.

The Present Status of the Bottini Operation as a Method of Treatment in Obstructive Hypertrophy of the Prostate Gland, Derived from a Summary of 834 Operations by 48 Operators.

Dr. Orville Horwitz said that contrary to the accepted view that prostatic hypertrophy usually began in individuals over 50 years of age, he believes that the morbid condition commences much earlier, and quotes Dr. L. Bolton Bangs, who agrees with him. Regarding the objection to the Bottini operation held by some, he thought the recorded experience of trustworthy surgeons gave sufficient refutation of the charges that this operation is "uncertain, dangerous and the results obtained are temporary in character." The operation of complete prostatectomy is considered a much more formidable undertaking than that of the Bottini; it is fraught with greater danger, and only to be attempted in rare instances. He thought it worthy of note that the writers objecting to the Bottini operation on the theoretical grounds, had the least practice with the method. In none of the cases under Dr. Horwitz's care has contraction of the vesical outlet, a complication suggested by some, occurred. Pyelitis, though adding to the danger, is not a contra-indication. Four such cases have been operated. Age is not a bar, though the mortality is lower when the resisting power is strong. Statistics of the 843 Bottini operations were given, with a series of conclusions.

Surgery and Its Relation to Neurasthenia.

Dr. G. D. Nutt, Williamsport, stated that in a large number of patients, prominent symptoms of a neurotic character, caused by disease, displaced or irregular muscular action of some organ, can be cured by surgical means. Examples of this class are diseases of the sexual organs, movable kidney, errors of refraction and muscular insufficiency of the recti muscles of the eye. In many cases of neurasthenia correction of abnormal conditions affecting the nervous system must precede the medical treatment. Since pathologic conditions cause nervous symptoms not directly connected with the affected organs, the question was raised, might there not be other diseased organs causing reflex disturbance yet unknown, to account for the large and increasing number of neurasthenics?

Rare Complications in Appendicitis with Their Treatment.

Dr. Ernest Laplace, Philadelphia, presented cases in which these complications had existed. They had a history of a previous acute attack, cured by medical measures, with, however, remaining obscure abdominal pain. Such cases had been erroneously diagnosed as affections of nearly every organ in the abdomen. In view of the difficulty in absolute diagnosis, the necessity of proper surgical intervention was pointed out. Particularly is this necessity apparent when it is realized that pain may be absent in acute appendicitis, or felt at a totally different spot; that fever may be absent, or range to 104 or 105; that a general disturbance and local rigidity are perhaps the only constantly present symptoms of the disease. In every case of appendicitis it should be borne in mind that there was a time when operation would have saved life.

Dr. Joseph Price made the statement that "more people are dying to-day of appendicitis than from an epidemic of smallpox." Chronic cases ought never to occur. Well-marked symptoms, late in the cases, evidenced the fact that the early symptoms should have been detected by a good clinician. He believed the public would come to hold the clinicians thrice responsible for early diagnoses. The complications mentioned in Dr. Laplace's paper should have been prevented by proper recognition of the early conditions.

Dr. Adolph Koenig, Pittsburg, said that he was a general practitioner and as such believed that the general practitioner should use good judgment. He had been in practice twenty-two years and had never yet lost a case of appendicitis which he had had from the beginning. If he saw that a case was not improving under medication he would call in a surgeon, but asserted that a surgeon had no right to operate in a mild inflammatory condition mistaken for appendicitis.

Dr. Mordecai Price reinforced the sentiments of the paper and the expressions of Dr. Joseph Price. His common experience of meeting physicians who had never seen a case of appendicitis, he thought, was explained by the fact that the condition was not recognized. In almost any intraperitoneal inflammation you can safely operate for appendicitis.

Dr. Laplace, in closing, said that inasmuch as the complications are numberless and the diagnosis is often difficult, the patient should be given the benefit of the doubt and the chance of recovery from immediate operation. If the appendix could be purged of its offensive material by drastic measures this should be done. Should the pain reappear after having disappeared, nothing could do justice but the knife. If everybody were rightly treated we would not hear of a case of appendicitis. An "unsuccessful operation" meant that somebody had blundered; the medical man had treated too long, or the surgeon has been a "dirty" surgeon. With the present understanding of appendicitis, the patient should live.

A Case of Perforating Typhoid Ulcer; Laparotomy; Recovery.

Dr. W. L. Rodman, Philadelphia, reported a case of perforating typhoid ulcer in the fifth week, followed by extensive general peritonitis, with an operation thirty-seven hours after the accident. The perforation was found directly under the incision. It was as large as the end of a finger and there was considerable extravasation into the cavity. The opening was rapidly closed with Lembert sutures, and the cavity was flushed with hot saline solution. A large amount of iodoform gauze was introduced at the upper end of the incision, and carried carefully down to and around the perforation, so as to protect the cavity from further possible infection, and also to facilitate drainage. A drainage tube was introduced at the lower end of the wound. Although the case was *in extremis*, with a pulse that could not be counted, the abdomen being like a tightly distended drum, the patient made an unexpected recovery, that is, to-day is perfectly well. The gauze was removed on the tenth day, portions of it having been withdrawn several days earlier. The drainage tube was removed at the end of the sixth day. Time of operation from beginning to end was sixteen minutes. Ether was used as an anesthetic. Dr. Rodman's impressions from this case were: 1. That a case of perforation, even though general peritonitis had begun, should be given the benefit of a laparotomy, if in a hospital where such work can be done with reasonable dispatch. This operation was done at least thirty-seven hours after the perforation. There have been, according to Keen in his monograph, but two successful cases reported where so great a time had elapsed between the accident and the operation, and one of these is doubtful, inasmuch as the perforation was not found. There could be few seemingly more desperate cases than this one, and this, together with a case of general peritonitis following a gunshot wound of the intestine and operated upon successfully fifty-one hours after the accident, has shown that it is rarely too late to give such cases the benefit of surgery. 2. That general anesthesia can be borne even in as grave a condition as this patient was in at the time of operation; she was practically pulseless. Cocain was considered at the time, but the patient was too young to give intelligent co-operation, so necessary for the performance of a laparotomy in the shortest possible time. A third question which might be raised is, how frequently will pathologic perforations of the gut in typhoid fever repair themselves without surgical intervention? Recovery does occasionally take place; the percentage has been estimated to be between 3 and 10 per cent. A much larger number will recover from operation and intervention is indicated. While it may be undoubtedly proper to decline interference in military practice on account of the limited facilities in field hospitals, the rule of action should be just the opposite in civil practice. There is an analogy between traumatic and pathologic perforations of the intestines, not complete, but involving the same general principles, and their treatment should be similar, namely, perform laparotomy as early as is consistent with the existing shock. It is as much a duty to operate in both conditions as it is to tie a bleeding vessel in hemorrhage.

Dr. Joseph Price considered the operation in this case the acme of good surgery.

Dr. Ella B. Everitt, Physician-in-Charge at the Woman's Hospital, said that it had been with the greatest interest that she had watched the case. Drainage from the tube was continued for a week after the operation and drainage from gauze a day or two later. Pus cells were present, but no active organisms were found. She thought the lesson was evident that such patients were entitled to operative interference even though, as was this child, almost moribund. The severity of the attack was so great that it seemed that the child could hardly have lived even without this grave operation. The result was doubly gratifying. The occurrence of a small hemorrhage after the operation was also noted as a second complication. The child rallied well from this and went on to a satisfactory recovery.

Dr. Elizabeth Bundy said the point of interest to her was the range of the persistent temperature. The condition of the child had begun to improve within an hour from the time of the accident.

A Case of Ascites Due to Syphilitic Cirrhosis of the Liver.

Dr. W. J. Roe, Philadelphia, presented the report of this case. Seventeen months after the beginning of ascites, and fourteen months after the first paracentesis, he transplanted the omentum between the perietal peritoneum and the abdominal wall, suturing the omental border of the stomach and colon to the margins of the artificial pocket. Previous to operation, paracentesis was performed 31 times, with an average of 760 ounces and of 14 days' interval. Subsequent to operation, it was performed 21 times; the average was 218 ounces and 12 days' interval. Marked improvement in her general health ensued. After six months her general condition reverted to that at the time of operation and death occurred at the end of eight months. Autopsy showed extensive vascular adhesions, a horseshoe kidney and syphilitic cirrhosis of the liver.

THIRD DAY—AFTERNOON SESSION.

Address in Obstetrics.

Dr. David Funk, Harrisburg, presented the status of several of the more serious obstetric complications and operative procedures. From the standpoint of the general practitioner it was stated that placenta previa would probably remain one of the most disquieting and alarming complications, because there can be no prophylaxis and because of the appalling rapidity with which it destroys life. Symphysiotomy as an operation of election would appear to be gradually displaced by Cesarean section, where the high forceps operation is dangerous. Puerperal septicemia and ectopic gestation were considered in detail. The responsibility of the general practitioner in making an early diagnosis in ectopic gestation, is emphasized. Points of differential diagnosis are as follows: Previous history of sterility; cessation of previously regular menstrual periods; irregular bleeding; colicky pains, and nausea and vomiting. Puerperal eclampsia with its etiology and treatment was considered. As to the etiology, writers are agreed upon a single point—toxemia; in the treatment, serum therapy is regarded as a problem of the future.

The Ultimate Results of Operation for Cancer of the Uterus.

Dr. Charles P. Noble, Philadelphia, emphasized the fact that the greatest problem confronting the medical world is the causation and cure of cancer. In a review of the recent American, French and German literature, it was shown that hysterectomy for cancer of the cervix cures about 10 per cent. of cases; based upon the standpoint of freedom from recurrence at the end of five years, the figures of different surgeons varying from a percentage of zero to twenty of cures. Hysterectomy for cancer of the body of the uterus gives better results, at least 75 per cent. being cured. The writer reports 32 cases of hysterectomy for cancer. Of these 10 have died of recurrence and 1 of pneumonia; 6 cases have been lost sight of, and 2 cases of cancer of the cervix are known to have recurred. The remaining 13 are free from recurrence at the present time. The hope for improvement in results lies in early diagnosis. The fallacy of the doctrine of climacteric hemorrhages is insisted upon, and it is strongly urged that all cases with irregular discharges would be promptly investigated.

Instrumental Perforation of the Uterus.

Dr. Wilmer Krusen, Philadelphia, discussed the conditions which soften the uterus and render the accident liable—carcinoma, anemia, tuberculosis and subinvolution. The different perforations are enumerated with the results. He reported a case of perforation of the uterus at the fundus, in which the omentum had been caught by the curette and drawn through the uterus into the vagina. He saw the case within two hours after the accident and immediately performed celiotomy, with an interrupted recovery. He emphasized the necessity for care, cleanliness and special training in all intra-uterine manipulations.

Some Surprises in the Practice of Obstetrics.

Dr. R. B. Ewing, West Grove, reported a series of obstetric cases interesting from the fact that the unexpected occurred. They were illustrative of the terse expression of one of the most gifted medical authors and teachers of America, who after a lifetime of active service as an obstetrician said: "The practice of obstetrics is full of surprises."

A Parasitic Skin Disease.

Dr. John V. Shoemaker, Philadelphia, exhibited a patient with a peculiar parasitic disease of the skin. Some of its characteristics are its appearance between the ages of 20 and 4 being found by preference upon the anterior portion of the chest, appearing as somewhat irregular patches. It differs from liver spots in that the cause is from without the body, the parasite is conveyed from water or from decayed vegetable material. Sometimes clean linen will contain the germs. He recommended the use of the ordinary corrosive sublimate, the copper salts whether in sulphate or the oleate, and mercury in the form of ointment as the oleate of mercury. He especially emphasized the fact that water should not be used; alcohol, or alcohol in the water should be applied.

A Remarkable Case of Infantile Typhoid of Fetal Origin with Recovery.

Dr. Harry C. Westervelt, Pittsburg, reported the case of a woman seven months pregnant with the third child, who had typhoid fever. The child was delivered at seven months and the mother had a severe course of the fever, but made a good recovery. The child presented the characteristic "old man" appearance of the prematurely born, and weighed 9 pounds, 14 ounces. A temperature of 103.4 F. soon appeared. The fever ran the regular course; the child recovered and presents every appearance of a healthy babyhood.

The Effects of Typhoid Fever on the Nervous System.

Dr. C. C. Hersman, Pittsburg, considered impure air, food, and water the most frequent causes of typhoid fever. In the majority of cases the nervous system is the first attacked by the poison. Not infrequently is the cardiac ganglion and nerve supply of the heart in general supercharged with the poison. The resulting symptoms were given in detail and the convalescence described. Meningitis was mentioned as a grave complication. Two such cases had been treated by the writer within the past two years, one of which recovered. Friedlander, Berlin, was quoted as giving 80 per cent. mortality in typhoid meningitis. Tubercular predisposition in children was mentioned as a fruitful source of typhoid meningitis.

The Value and Importance of Teaching the Fundamental Branches of Medicine from the Standpoint of Their Practical Application.

Dr. Gwilym G. Davis emphasized the fact that teaching should be conducted so that the student understands his subject instead of simply knowing isolated facts. Medicine, it was said, requires too much of a man to enable him to qualify by simply memorizing his subject. Text-books are too statistical and not sufficiently explanatory. Examiners should avoid catch questions and give such that require an understanding of the subject for their answer.

To teach the student to think, not summarize, is the object. The day of the true pedagogue, though long aelayed, is at last dawning.

Ruptured Tubal Gestation and the Physician.

Dr. John M. Fisher, Philadelphia, stated that no form of acute supravaginal pelvic disorder is fraught with more immediate danger to the life of the individual, and yet none in the vast majority of cases is more readily diagnosticated by the experienced gynecologist, and none can be more satisfactorily dealt with by the surgeon than that of ectopic pregnancy. The diagnosis being made, prompt surgery, with but few exceptions, saves the patient. With comparatively few exceptions Dr. Fisher stated that the condition is tubal. The causes are enumerated and the symptoms described. In the light of the perfected methods in surgical technic of the present day the author declares that so-called conservative plans are not to be considered, save in so far as they add to the ever-increasing number of unfortunates to our mortality statistics.

The Kidney Complications of Typhoid Fever.

Dr. James Ely Talley, Philadelphia, in this paper enumerated these complications as albuminuria, acute parenchymatous nephritis, hemorrhagic nephritis and suppurative nephritis. In a series of over 15,000 cases albuminuria occurred in 29 per cent. of cases. Acute parenchymatous nephritis occurred in 3 per cent. of a series of over 18,000 cases with a mortality of from 30 to 50 per cent. Edema is rarely produced, and, if the patient lives, the nephritis almost never becomes chronic; only two such cases are recorded in over 37,000 cases of typhoid. Hemorrhagic nephritis is defined as but an aggravated form of the acute parenchymatous nephritis. It tends strongly toward uremia and has a very large mortality. Suppurative nephritis occurs occasionally, and in these cases typhoid bacilli have been found frequently in the pus or kidney substance at postmortem. If chronic nephritis exists and typhoid intervenes the mortality is very high, over 90 per cent. Albuminuris and acute nephritis occur in the typhoid fever of children with about the same frequency as in adults.

New Method of Performing Nephropexy.

Dr. Henry D. Beyea, Philadelphia, described in full the surgical treatment. The operation is indicated only in those cases where the pathologically mobile kidney produces a complex of symptoms inducing persistent ill-health, and the prescribed medical and mechanical treatment either fails to give relief, or, in the judgment of the physician, is impracticable from the beginning.

Statistics of Typhoid Fever at the Philadelphia Hospital from Jan. 1, to Dec. 1, 1899.

Dr. Herman B. Allyn gave the following statistics: Whole number of cases 184; 135 were males and 49 females; 146 were white and 38 black or mulattoes. The fatal cases numbered 31, a mortality of 16.84 per cent., accounted for largely by the character of the patients and stage of the disease at the time that they were admitted. The patients were made up of the homeless, neglected, dissipated and outcast. Half the fatal cases occurred in negroes, although they constituted only about one-fifth of the whole number of cases. Moreover, only one-fifth of the fatal cases—6—were admitted during the first week, and 23 after the disease had lasted two weeks or more. The causes of death, following Osler's classification, were: Asthenia, 14; intercurrent affections, 9; accidents of the lesion, 8. The Gruber-Widal serum reaction was in accord with the final clinical diagnosis in 88 per cent. of the last 113 cases.

Fracture of the Neck of the Femur—Report of a Case, X-Ray and Specimen.

Dr. Charles E. Thomson, Scranton, reported the case of a patient, aged 62, who sustained a fracture in August, 1899. The patient was bedridden for three months. The shortening amounted to two and one-half inches and the hip was very painful. The operation was described. A solid silver nail, three-sixteenths of an inch in diameter and two and one-half inches long, was driven through the neck and into the head of the femur. The bone flap was replaced and retained by a small silver nail. One year after operation the patient had three-quarters of an inch shortening with 90 degrees free and painless motion. Death occurred from intercurrent disease six months later. The specimen showed firm bony union.

The Pathology, Symptomatology and Treatment of Uremia.

Dr. David Riesman, Philadelphia, presented a very valuable paper devoted to a portrayal of certain less common forms of uremia, namely, uremia associated with hemiplegia, aphasia, mental confusion and insanity. Two points in the treatment were emphasized: bleeding, and sweating. The patient is put into a hot bath of 110 F. for ten minutes, taken out and then put into a hot pack for twenty minutes.

The Etiology of Acute Dysentery.

Dr. Simon Flexner, Philadelphia, said that reports of bacteriologic work in the tropics, Japan, Germany and this country on the etiology of acute dysentery, agree that there is present a septic organism quite peculiar and not found in the body under normal conditions, which seems to be present uniformly when cases of acute dysentery arise. The fact is a matter of importance in respect to the causation of this serious disease and to its prevention. It would appear that the sporadic cases have the same origin as the acute dysentery, and this is of particular importance in the consideration of epidemics. The micro-organism that has been discovered is the organism bearing more or less resemblance to the bacillus of typhoid fever. It occurs in the intestines and can be obtained from the dejecta. It does not occur in health or in other diseases; moreover, the blood serum will give a reaction similar to the Widal reaction. It seems probable, therefore, that, as a result of this work, the septic organism of acute dysentery has been observed. It does not exclude the amoeba. It is possible by the use of this organ to produce serum that may be curative.

In Closing.

Dr. F. B. Ball, the new president, was introduced by Dr. Davis, who welcomed him in a few graceful words. After a short address by Dr. Ball, and a resolution of thanks to all those who had participated in the arrangements for the pleasure of the Society and the success of the meeting, offered by Dr. Alexander Craig, Columbia, the meeting was declared adjourned. The next meeting will be held at Allentown.

CHICAGO ACADEMY OF MEDICINE.

Regular Meeting, held September 13, 1901.

Dr. W. X. Sudduth in the Chair.

Forensic Eye Aspect of Locomotor Ataxia.

Dr. James G. Kiernan presented a paper on this subject. A recent suit against the Chicago Union Traction Company was based upon a diagnosis, made of locomotor ataxia, chargeable to an alleged traumatism occurring fourteen days previous to examination, from an alleged condition of the pupils of which no clear description was given. The diagnostician (a member of the family) had observed the pupils under disadvantageous conditions. From his testimony it would appear that this physician had a crude notion that there was reflex iridoplegia or the Argyll-Robertson pupil. He did not use this term, nor did he describe the procedures he adopted in testing the pupil. No other symptoms of locomotor ataxia were described. The Argyll-Robertson pupil is reflex iridoplegia associated with preserved accommodative mobility, that is, where the pupil is as immovable as a frozen opening, no matter how brightly illuminated or how deeply shaded, but contracts when the finger is approached to the nose. It is found early in locomotor ataxia, but it is also found in paretic dementia, and, as might be expected, in constitutional syphilis. It has even been claimed that it is a diagnostic mark of this last condition. Cases of constitutional syphilis, however, occur quite frequently in which reflex iridoplegia is absent. The position taken by Spitzka, fourteen years ago, that this condition is rarely found in constitutional syphilis, can not now be maintained. A temporary iridoplegia has been noted after railroad accidents and other shocks. Exceptionally, the same pupillary condition has occurred in alcoholism and after diphtheria in the adult. For forensic diagnostic purposes this pupil is not pathognomonic of locomotor ataxia. In the case in which the question was raised, the patient had died before trial. The jury gave less than one-tenth of the statutory limit. If the litigant really had locomotor ataxia, this condition, in Dr. Kiernan's opinion, had preceded the accident and was in all probability then contributory thereto. The man had driven a United States mail wagon on the tracks in front of a street-car. Locomotor ataxia under such conditions could prevent him turning in time.

Dr. Casey A. Wood was of opinion that due care was not always exercised by general practitioners, forensic physicians, or even ophthalmologists in the diagnosis of the Argyll-Robertson pupil. There were so many conditions in which similar states occurred that the diagnosis of locomotor ataxia on this symptom alone was not justified.

Dr. William L. Baum could not agree with certain syphilographers as to the pathognomonic diagnostic value of the Argyll-Robertson pupil in constitutional syphilis. In his experience it was too frequently absent to be regarded as pathognomonic of constitutional syphilis. The fact that it occurred in para-syphiloses, like locomotor ataxia and paretic dementia, did not necessarily demonstrate its value as a symptom of constitutional syphilis.

Dr. Kiernan, in closing, agreed with both Dr. Wood and Dr. Baum, that the pathognomonic value of the Argyll-Robertson pupil in constitutional disease was doubtful.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

Treatment of Bronchitis.

Just at this time of year the physician comes in contact with a great number of patients complaining of colds in the head and bronchial catarrh. In the larger cities this is due in a great many instances to the steam-heated apartments. People emerging from a warmer atmosphere are exposed to the cold air and the body becomes chilled, the circulation of the skin is greatly disturbed and the bronchial mucous membrane congested. Those patients suffering from organic heart lesions—especially where mitral lesions are present, producing a congested condition of the pulmonary circuit—are more susceptible to the changes in the atmosphere and the weather. Such conditions in the extremes of life make the prognosis in attack of bronchitis more unfavorable. The treatment must be directed to the different phases of the disease and to the special symptoms which may arise in each individual case. In this connection we wish to emphasize one point in the management of such cases, just as in all cases of infection, and that is—watch the elimination. Elimination should be promoted, not alone by the kidneys but also by the skin, bowels and respiratory tract. In this way the catarrhal turgescence of the mucous membrane is lessened and the process of free secretion is established. The patient should be cautiously and well fed with most digestible food, having warm clothing for the body and proper protection for the chest. In the milder forms of acute bronchitis the following is of service as an expectorant:

℞.	Ammon. carb.	ʒiss	6
	Ammon. bromidi	ʒii	8
	Vini ipecacuanhæ	ʒiv	16
	Aq. menthæ piperitæ q. s. ad	℥iii	96

M. Sig.: One teaspoonful every four hours in water; or:

℞.	Ammon. chloridi		
	Sodii salicylatis, āā	ʒii	8
	Tinct. hyoscyami	ʒv	20
	Mist. glycyrrhizæ co. q. s. ad	℥iii	96

M. Sig.: One teaspoonful every four hours.

If the patient is strong and of a well-marked sthenic type, according to Sir T. Granger Stewart, antimony is a drug of great efficacy, as follows:

℞.	Vini antimonialis		
	Vini ipecacuanhæ, āā	ʒiii	12
	Spts. chloroformi	℥iss	48
	Liq. ammon. citratis q. s. ad	℥vi	192

M. Sig.: One tablespoonful in water every six hours; or:

℞.	Vini antimonialis	ʒii	8
	Spts. etheris nitrosi	℥ss	12
	Liq. ammon. acetatis q. s. ad	℥vi	42

M. Sig.: One tablespoonful in water every six hours. Discontinue when there are symptoms of depression or when free expectoration is established.

In patients presenting signs of feebleness or general weakness, expectorants must be combined with cardiac stimulants, as follows:

℞.	Ammon. carb.	gr. xl	2	66
	Spts. ammon. arom.	ʒvi	24	
	Aq. chloroformi q. s. ad	℥iv	128	

M. Sig.: One tablespoonful every five or six hours; or:

℞.	Tinct. strophanthi	m. xl	2	66
	Spts. ammon. arom.	ʒvi	24	
	Aq. chloroformi q. s. ad	℥iv	128	

M. Sig.: One tablespoonful every six hours.

When the cough is dry and very troublesome at night, so that the patient is unable to sleep, the following containing codein is valuable, which should, however, *never be given* so long as the cough brings up phlegm, but to quiet an aggravating cough, is useful.

℞.	Ammon. carb.	ʒss	2	
	Codeinæ	gr. iv		25
	Tinct. hyoscyami	℥i	32	
	Syr. pruni virg.	℥iss	48	
	Aq. camphoræ q. s. ad	℥iv	128	

M. Sig.: One dessertspoonful every two or three hours.

The free use of expectorants is of advantage in getting rid of particles of dust and foreign substance, which have lodged upon the mucous membrane and act as irritants to the respiratory passages. But we wish to suggest care in the use of anodynes as in the foregoing prescriptions, for too free use of opiates and anodynes impair digestion, produce anorexia, cause constipation and quiet the cough, through which nature is attempting to remove causative factors.

Organic heart lesions, such as mitral regurgitation or obstructive lesions, producing marked congestion and distension of the bronchial vessels, cause a cough and sometimes an acute inflammation. In these cases measures must be taken to support and remove the load by proper cardiac stimulation and free elimination. The patient should be put to bed, so as to *reduce the work of the heart, and the following is recommended* in such conditions:

℞.	Ammon. carb.	gr. xl	2	66
	Infusi digitalis q. s. ad	℥iv	128	

M. Sig.: One tablespoonful in water every five or six hours.

Acting as indirect heart stimulants by dilating the peripheral blood vessels and thus *relieving* the pulmonary congestion and at the same time promoting diuresis, the nitrites are valuable:

℞.	Spts. glonoini (1 per cent.)	m. vi		36
	Spts. etheris nitrosi	ʒiss	6	
	Spts. chloroformi	m. vi		36
	Alcoholis	ʒi	4	
	Aquæ q. s. ad	℥iii	96	

M. Sig.: One tablespoonful every four hours.

Cases of bronchitis, with a history of rheumatism, are best treated by the use of the salicylates in some form, combined, perhaps, with alkalies, as follows:

℞.	Sodii salicylatis		
	Sodii bicarb., āā	ʒii	8
	Syr. glycyrrhizæ co.	℥ss	2
	Aq. foeniculi q. s. ad	℥iv	128

M. Sig.: One tablespoonful in water every four hours.

And in gouty bronchitis colchicum is very valuable, if a proper preparation of this drug can be obtained. But as is *the case in a few other drugs the value of this drug is uncertain*, because of the unreliability of the crude drug used in making the medicinal preparation. The following combination is advised:

℞.	Vini colchici (sem.)		
	Vini antimonialis, āā	ʒiiss-iv	10-16
	Pot. bicarb.	℥ss	16
	Aq. gaultheriæ q. s. ad	℥vi	192

M. Sig.: One tablespoonful four times a day in water.

CHRONIC BRONCHITIS.

The chronic forms of bronchitis require special attention in their treatment, because the degree of activity is not so great as in the acute, but the condition may go on for months or years, being kept up by constant irritation from some source, and this should be sought for and removed if possible. Even greater care must be observed in the clothing, the occupation, the food and the climate. However, in no disease, as Loomis states, is a careful study of each individual case more important. This form of bronchitis occurs in connection with emphysema and diseases of the heart and kidneys in elderly people, and, under such circumstances, the particular cause should be discovered and treated in each case.

Potassium iodid is very often used to good advantage, and has been found very efficient in the majority of cases. The *following formula* is recommended:

℞.	Potassii iodidi	ʒii	8
	Syr. picis liq.	ʒiii	12
	Syr. acidi hydriodici	ʒv	20
	Syr. tolutani q. s. ad	℥iii	96

M. Sig.: *One teaspoonful four times a day in water.*

The aromatic balsams, combined with a mild anodyne, are serviceable if the cough becomes troublesome:

℞.	Balsami copaibæ	
	Pulv. camphoræ, āā	ʒi
	Pulv. acaciæ, q. s.	

M. Ft. capsulæ No. xv. Sig.: One capsule four times a day; or:

℞.	Copaibæ	ʒii	8
	Spts. chloroformi	ʒss	2
	Mucilag. acaciæ	ʒvi	24
	Aq. camphoræ q. s. ad	℥vi	128

M. Ft. mistura. Sig.: *Two tablespoonfuls three times* daily.

Turpentine is sometimes very efficacious, and it may be *given in capsule* or in the form of an emulsion according to Yeo:

℞.	Olei terebinthinæ	ʒii	8
	Mucilag. acaciæ	℥i	32
	Mist. amygdalæ q. s. ad	℥vi	192

M. Ft. mistura. Sig.: Two tablespoonfuls at each dose, every six hours.

Creosote is a valuable preparation *in chronic bronchitis*, and may be given in capsules or in the liquid form as follows:

℞.	Creosoti	ʒss	2
	Aq. chloroformi q. s. ad	℥ii	64

M. Sig.: One teaspoonful four times daily.

As a good stimulating expectorant in cases of chronic bronchial catarrh with profuse, stringy, adhesive mucus, such as is often met with in the aged, the following is recommended by Yeo:

℞.	Ammon. carbonatis			
	Sodii bicarb., āā	gr. xl	2	66
	Tinct. camph. comp.	ʒiv	16	
	Spts. chloroformi	ʒiss	6	
	Infusi senegæ q. s. ad	℥viii	192	

M. Ft. mistura. Sig.: Two tablespoonfuls every five or *six hours, administered in hot water.*

Medicolegal.

Period of Gestation.—The *Supreme Court of Nebraska* says, in the case of Erickson vs. Schmill, that, while there is no absolute rule upon the subject, by general consent, based on extended observation, the usual period of gestation is considered to be about 280 days. This is common knowledge, which courts may be assumed to possess. But that the possible period of embryonic existence is more than 300 days is a fact which courts are not bound to know and act on in the trial of causes. That is to say, courts do not take judicial notice of the fact that the possible period of gestation exceeds ten calendar months.

By Whom Existence of Blood May Be Proved.—It is not necessary, the Supreme Court of Idaho holds, in the murder case of State vs. Rice, that an expert witness, or one skilled in chemistry, be called to prove the existence of blood. The experience of man "from the cradle to the grave" so familiarizes him with the appearance of blood that every witness possessing the full use of his senses, who is competent to testify to other matters, is competent to testify to the existence of blood, or presence of blood stains. It is only where there is doubt as to whether the blood is that of a human being or that of some inferior animal that the aid of chemistry or expert witnesses is necessary.

Physician Calling Wife as Witness to Contract.—The statutes of the State of Washington provide that in an action or proceeding where the adverse party sues or defends as executor, administrator or legal representative of any deceased person, a party in interest or to the record shall not be admitted to testify in his own behalf as to any transaction had by him with, or any statement made to him by, any such deceased person. The case of Whitney vs. Priest was an action by a physician against an administrator for compensation for professional services rendered to the decedent, the wife of the administrator, during her last illness. At the trial, the physician's wife was permitted to testify that she was present with her husband, and that he and the decedent agreed upon the terms of the contract for his surgical treatment of her. This was objected to, as being inhibited by the statute, and the Supreme Court of the State of Washington holds that it was error on account of which the judgment obtained for services must be reversed. It says that the plaintiff and the witness were, as before stated, husband and wife. The professional services which were the subject of contract between the plaintiff and the deceased involved the community interest. The compensation for such services belonged to the community. The physician's wife was interested equally with her husband. She was equally interested in the result of this action. She must necessarily be said, therefore, to be a party in interest. and the transaction and the statements made to the plaintiff physician must equally involve his wife. Hence, the witness fell within the disability of the above provision of the statute, and it was error to admit her testimony as to the transaction and statements made by the deceased to the plaintiff.

Skill Required; Consultation; Diagnosis; Harshness.—The Appellate Court of Illinois, First District, in the malpractice case of McKee vs. Allen, holds that a difference of judgment among medical men as to the best course and method of treatment does not by any means tend to prove that either party is wholly wrong or wholly right. A physician who has given a patient the benefit of his best judgment is not liable for negligence even if his judgment is erroneous, unless the error is so gross as to be inconsistent with reasonable and ordinary skill and care. Again, the court holds that it is the duty of physicians and surgeons to exercise reasonable and ordinary care, skill and diligence in the practice of their profession. To this extent they are liable and no further. They are not required to possess the highest, but reasonable skill. The burden of proof is upon the plaintiff in an action for malpractice to show the want of such care, skill and diligence, and also to show that the injury complained of resulted from failure to exercise these requisites. It can not be said as a matter of law, where a physician recommends a method of treatment recognized and approved by the standard authorities upon medicine and surgery as appropriate to the case in hand, and consults another physician or surgeon who has had experience in the use of such method, and who, after examination of the patient, concurs in his judgment, and the patient submits to the treatment upon such advice, that he has failed to exercise ordinary care, skill or diligence in making such recommendation. If he has not so failed he is not liable. The physician or surgeon is not an insurer of a successful result. Furthermore, the court holds, in this case, that if the diagnosis in question be considered erroneous in calling the disease, which was sciatic rheumatism, chronic, instead of acute, it must still appear that his error in judgment in this respect was not consistent with reasonable and ordinary skill and care; and it must further appear that surgical treatment of acute sciatica was so clearly unwarranted, and such a violation of sound rules of professional practice, as to be also inconsistent with ordinary and reasonable medical skill and care. Then, there was some evidence in this case tending to show that the physician, in the effort to manipulate and straighten the patient's leg, several times resorted to what in her sensitive condition was very painful treatment. But it was apparent that it was employed as a curative measure, and it was not shown to have been injurious. This being all that the court has to say about it is that if his methods in this respect were harsh, the patient was not obliged to retain him in attendance, but was at liberty to employ other medical aid.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

Boston Medical and Surgical Journal, October 3.

1 *A Case of Myeloma of the Spine, with Compression of the Cord. John Jenks Thomas.
2 Hydrotherapy in Chronic Disease. (To be concluded.) Simon Baruch.
3 *Association of Anemia with Chronic Enlargement of Spleen. Arthur H. Wentworth.
4 Infantile Scurvy. Edward L. Peirson.
5 Rhachitis. Arthur R. Crandell.

Medical Record (N. Y.), October 5.

6 *The Use and Limitations of the Elastic Ligature in Intestinal Surgery. Theodore A. McGraw.
7 *The Proper Method of Teaching the Anatomy of the Nervous System. L. Harrison Mettler.
8 *Pre-medical Education. Stanley Coulter.
9 *The Chest Pantagraph and the Manometer—Their Clinical Use and Value. C. B. Van Zant.
10 *Pistol-shot Wounds. Thomas Hayes Curtin.

Philadelphia Medical Journal, October 5.

11 *A Lecture on Strangulated Hernia. Carl Pfister.
12 *The Sanatorium Treatment of Tuberculosis. Arthur J. Richer.
13 *Orthopedic Treatment of Deformities and Disabilities Resulting from Diseases of the Nervous System*—Special Reference to Tendon Transposition. B. E. McKenzie.
14 Melancholia and Its Treatment. George Stockton.
15 The Treatment of Acute Otitis Media. Frederick L. Jack.
16 *The Close Relationship Existing Between Epilepsy and Dyspepsia. Charles D. Aaron.

New York Medical Journal, October 5.

17 *The Lane Lectures on the Social *Aspects of Dermatology*. Malcolm Morris.
18 Laryngology and Its Place in Medical Education. (To be concluded.) Henry L. Swain.
19 *The Influence of Climate upon Nervous Diseases, Considered from a Physiological Standpoint. F. Savary Pearce.
20 Was the Epidemic that Raged in Athens, B. C. 430, Genuine Bubonic Plague? Henry M. Fisher.
21 *Acute Amygdalitis: Its Treatment by the Local Application of Tincture of Iodin. Samuel Floersheim.
22 Review of a Few Cases of Wounds Caused by Bullets from Revolvers of Moderately Large Caliber. J. Hobart Egbert.

American Medicine (Philadelphia), October 5.

23 *Primary Cancer of the Gall-bladder and Bile-ducts. W. P. Manton.
24 *The Heredity of Appendicitis. F. Forchheimer.
25 *Cleft Palate and Its Relation to Speech. G. Hudson Makuen.
26 A Case of Endocarditis Developed During Typhoid Fever. J. A. Scott.
27 *The Efficacy of Quarantine and Fumigation in the Prevention of the Spread of Yellow Fever Without Molesting the Mosquito. Jos. Waldauer.
28 On the Agency of Parasitic Vermin and Other Insect Pests in the Spread of Disease. George Homan.

Medical News (N. Y.), October 5.

29 Acute Rheumatism.. Wm. Watt Kerr.
30 *Anesthesia and Analgesia; A Study of Drug Action and Modern Methods. William Seagrove Magill.
31 Lager Beer in Acute Vomiting. Louis Kolipinski.
32 Conservative Operations upon the Uterine Adnexa. Henry T. Byford.
33 *Acute Edema of the Uvula, Palate, Pharynx, and Epiglottis, Following the Excessive Application of Adrenal Solution Preserved with Chloretone. Solomon Solis Cohen.

Cincinnati Lancet-Clinic, October 5.

34 Occipito-posterior Positions of the Vertex. William Gillespie.

St. Louis Medical Review, October.

35 *A Means of Reducing an Overgrowth of the Inter-maxillary Frenum, Permitting the Retention of Two Central Incisors in Close Apposition. Hanau W. Loeb.

Virginia Medical Semi-Monthly (Richmond), September 27.

36 *A Case of Movable Liver—Hepatopexy. J. H. Carstens.
37 Anchylostomum Duodenale in Virginia. Wm. B. Gray.

Iowa Medical Journal (Des Moines), September 15.

38 President's Address, Sioux Valley Medical Association. J. N. Warren.
39 Cancer of the Breast. Frank S. Hough.
40 The Influence of Impaired Hearing upon the Development of the Child. F. A. Powell.

41 What Can We Do to Mitigate the Horrors of Quarantine to the Laity? E. D. Frear.
42 The Toxemia of Pregnancy. Chas M. Wade.
43 Arthritis. P. L. Brick.
44 The Care of the Consumptive. J. W. Kime.
45 Raynaud's Disease, with Report of a Case. M. E. Silver.
46 Baby Feeding. J. G. Biller.

Archives of Ophthalmology (New Rochelle, N. Y.), September.

47 Determination of the Presumable Refraction of the Eye, With and Without Its Crystalline Lens. Edmund Landolt.
48 Transplantation of a Large Wolff Graft, Forming a New Lining of the Orbit, and Permitting the Wearing of an Artificial Eye. Charles H. May.
49 Ocular Affections in Cases of Xeroderma Pigmentosum (Epibulbar Carcinoma) in a Boy of Six Years. R. Greeff.
50 *Thrombosis of the Central Artery of the Retina, Presenting the Picture of So-called Embolism, With the Pathological Examination. Leonore Welt.
51 *On Embolism of the Central Artery of the Retina. C. Schweigger.
52 *On Bell's Phenomenon. Wilibald A. Nagel.
53 The Use of a Glass Lachrymal Pipette. W. H. Bates.
54 Perforating Wound of Upper Lid and Eyeball. Reduction of Prolapsed Iris; Recovery. S. J. McLennan.
55 Periscopic Lenses. A. S. Percival.

Occidental Medical Times (San Francisco), September.

56 Hypochondriasis and Hypochondriacal Ideas—A Case of Self-mutilation. A. W. Hoisholt.
57 Suggestions Bearing upon the Diagnosis and Treatment of Fractures at the Lower End of the Humerus. Thos. W. Huntington.
58 Technic of General Anesthesia. E. M. Bixbey.
59 The Surgical Treatment of Tuberculosis of the Glands of the Neck. S. J. Hunkin.

American Journal of Obstetrics (N. Y.), September.

60 *The Complications and Degenerations of Fibroid Tumors of the Uterus as Bearing upon the Treatment of These Growths. Charles P. Noble.
61 *A Contribution to Experimental Uretero-cystostomy. Clarence A. Smith.
62 *The Conservation or Preservation of the Ovaries and Functionating Uterine Tissue in the Operation of Hysteromyomectomy. Henry D. Beyea.
63 Partial Hysterectomy (?) for Puerperal Sepsis. Hiram N. Vineberg.
64 A Case of Congenital Malformation Leading to Error in Diagnosis of Tubercular Peritonitis. William F. Metcalf.
65 A Rare Case of Exfoliative Vaginitis. George Gellhorn.
66 Hyperplastic Glandular Endometritis. Palmer Findley.

Medical Examiner and Practitioner (N. Y.), September.

67 Address of Chairman of the Medical Section, National Fraternal Congress. T. Millman.
68 The Medical Examiner in Fraternal Insurance. Moreau R. Brown.
69 Tuberculosis in Relation to Life Insurance. C. A. McCollum.
70 How May We Reduce the Death-Rate from Cancer and Consumption? Emma Cook.
71 Heredity and Its Value as a Factor in Life Insurance. F. A. Smith.
72 The Modern Medical Director. James T. Craig.
73 Location in Its Bearing upon Life Insurance. Ira W. Porter.

American Gynecological and Obstetrical Journal (N.Y.), September.

74 Obstructive Diseases of the Lower Bowel. Henry O. Marcy.
75 *Hydatids of the Uterus. Frederick G. Smith.
76 A Case of Deciduoma Malignum. William McDonald.
77 Five Gynecological Cases of Special Interest. Edgar D. Smith.
78 *Operation for Radical Cure of Cystocele in Woman by Temporary Suspension of Bladder. J. B. Taulbee.
79 Puerperal Fever. I. A. McSwain.
80 *Infection as an Etiologic Factor in Abortion. Miles F. Porter.
81 Symphysiotomy on a Generally Contracted Pelvis. M. Ravin.
82 Case of Multiple Fibroids of the Uterus and Broad Ligament Cyst Filled with Altered Blood; Removed by Kelly's Method; Recovery. Lapthorn Smith.

Oklahoma Medical Journal (Guthrie), September.

83 Ataxic Paraplegia. John W. Dukf.
84 Tuberculosis of Bone. J. Garland Sherrill.

Western Medical Review (Lincoln, Neb.), September 16.

85 *Round Ulcer of the Stomach. N. S. Davis, Jr.
86 Pelvic Injuries. R. Harvey Reed.
87 *Some Recent Conclusions in Regard to Appendicitis. Byron B. Davis.
88 *Hypospadias. C. H. Mayo.
89 A Case of Abscess of the kidney. W. O. Wisner.

Woman's Medical Journal (Toledo, Ohio), July.

90 For the Good of the Order. Azuba D. King.
91 Prophylaxis in Obstetrics. Agnes Eichelberger.
92 Placenta Previa. Sophie H. Scott.
93 Women Physicians in Care of the State Insane. Mary A. Coveny.

Medical and Surgical Monitor (Indianapolis), September 16.

94 Treatment of Acute, Anterior Urethritis. W. A. Hackett.
95 *The Use of Sulphide of Calcium as a Remedy, including the Opinions of Drs. H. A. Hare, Davis M. R. Culbreth and George F. Butler, Expressed to the Writer. Samuel E. Earp.
96 Health in the State of Indiana During August, and Statement in Regard to the Deaths in that Month. John N. Hurty.

Louisville Monthly Journal of Medicine and Surgery, October.

97 *The Ophthalmoscopic Diagnosis of Bright's Disease. Dudley S. Reynolds.
98 A Gunshot Wound of the Right Lung with Complications. A. M. Morrison.
99 Hypno-magnetism and Suggestive Therapeutics. J. Glahn.
100 Vaccination. A. D. Price.
101 Ununited Fractures. J. Lively Johnson.
102 The Early Operation for Appendicitis from a Pathologic Standpoint. J. G. Carpenter.
103 The Symptoms and Treatment of Diarrheas of Children. C. L. Venable.
104 Chloretone. Walter P. Ellis.

Maryland Medical Journal (Baltimore), October.

105 *The Significance of Apex Pneumonia. Eugene F. Cordell.
106 Pregnancy at the Age of Eleven Years, Terminating in Natural Delivery. L. M. Allen.

Toledo Medical and Surgical Reporter, October.

107 Multiple Gynecic Operations; Report of a Case. William H. Fisher.
108 A Postmortem Recollection. J. T. Woods.
109 Lysol. J. D. Ely.
110 Rectal Feeding. Robert Peter.

Dominion Medical Monthly (Toronto), September.

111 *Presidential Address, Canadian Medical Association. H. H. Chown.
112 Address, Executive Health Officers' Association of Ontario. W. T. Connell.
113 Practical Solution of the Question of Dealing with the Consumptive Poor. E. J. Barrick.

Southern Illinois Journal of Medicine and Surgery (Metropolis), September.

114 History of the Massac County Medical Society. C. E. Trovillion.
115 The Differential Diagnostic Points in Variola and Varicella. A. C. Ragsdale.

Therapeutic Gazette (Detroit, Mich.), September 15.

116 Lessons of a Decade in Hydrotherapy. Simon Baruch.
117 A Case of Carbolic Acid Poisoning. Walter R. Griess.
118 *The Cure of Enuresis. Philip F. Barbour.
119 *Use of Hydrotherapy in Neurasthenia and Other Nervous Affections. Wharton Sinkler.
120 Serous Extravasation Cyst of Both Sides of the Nasal Septum. Nathan G. Ward.
121 The Diagnosis and Treatment of Nasopharyngeal Syphilis. P. S. Donnellan.

Clinical Review (Chicago), October.

122 The General Toxemias and Their Treatment. L. L. Skelton.
123 Clinical Lectures upon the Etiology, Pathology, Diagnosis and Treatment of Tumors. A. H. Levings.
124 Cases of Insanity. Daniel R. Brower.

Medical Sentinel (Portland, Ore.), September.

125 *Hydraulic Pressure—A Means Used to Open the Common Gall Duct, Which Remained Closed, or Reclosed After the Removal of Impacted Stones. L. P. McCalla.
126 Some Facts Bearing on the Question of Leprous Japanese and Salmon Canning. Albert S. Ashmead.

Canadian Practitioner and Review (Toronto), September.

127 On the Importance of an Early Recognition of Locomotor Ataxia—Do the Eye Symptoms Assist Us? J. T. Duncan.
128 Syphilitic Fever Occurring as a Complication in a Maternity Case. Helen MacMurchy.
129 Hernia Ten Years After Abdominal Section. A.Gibson.

Detroit Medical Journal, September.

130 *Tuberculosis. Heneage Gibbes.
131 Recent Epoch Making in Medicine. Samuel Bell.

Mississippi Medical Record (Vicksburg), October.

132 Venereal Diseases. R. Franklin Nimocks.
133 Clinical Lecture. (Ureteral Catheterization, etc.) Howard Kelly.
134 Thrush. C. R. Henderson.

Southern California Practitioner (Los Angeles), September.

135 Refraction Errors in Their Medical Relation. George J. Lund.
136 Endometritis. F. R. Burnham.

137 Can Injuries to the Parturient Canal Be Avoided During Normal Labor? If Unavoidable, What Is the Duty of the Obstetrician? Marie B. Werner.
138 Pelvimetry. Melvin L. Moore.
139 Darwinism and the Doctor. Cephas L. Bard.

Alabama Medical Journal (Birmingham), September.

140 *Some Sociologic Problems in Relation to Marriage, Crime, Insanity, etc. R. R. Kime.
141 The Treatment of Scarlatina. W. H. Wilder.
142 Maternal Impressions. R. C. Bankston.
143 *A Plea for the Broader Treatment of Epilepsy. William P. Spratling.

Southern Practitioner (Nashville, Tenn.), October.

144 Gunshot Wounds of the Stomach. Richard Douglas.
145 Nerve Reflexes Due to Abdominal and Pelvic Pathology. W. A. Bryan.
146 Practical Ideas on the Treatment of Pneumonia, Pericarditis, and Tubercular Pleurisy. Edmond J. Melville.

Charlotte Medical Journal, September.

147 *Pulmonary Tuberculosis and the Trades. C. P. Ambler.
148 Rheumatism and the Salicylates. F. R. Millard.
149 The Treatment of Some Chronic Conditions of the Intestinal Tract. David E. Bowman.
150 The Care of Breasts in Nursing Mothers. George Barksdale.
151 American Therapeutic Contribution to Medicine. B. T. Whitmore.

Southern Medical Journal (La Grange, N. C.), September.

152 Treatment of Infantile Eczema. J. W. P. Smithwick.
153 Some Notes on the Medical Treatment of Cancer. H. B. Esmond.
154 A Therapeutic Study of the Epsom Water of Vade Mecum Spring. J. W. P. Smithwick.

Nashville Journal of Medicine and Surgery, September.

155 Report of Surgical Operations in the Private Surgical Infirmary of Drs. C. S. and Samuel S. Briggs During Its Tenth Season, from Sept. 10, 1900, to Aug. 1, 1901. (Concluded.) Samuel S. Briggs.

AMERICAN.

1. **Spinal Myeloma.**—After reporting a case operated upon by resection of the first four dorsal laminæ and removal of the growth, with microscopic examination of the same, Thomas goes at length into the literature of the subject. The specially interesting feature in his case was the very complete relief of the paraplegia by the operation, the presence also of disassociation of the sensations of temperature, pain and touch such as in syringomyelia in a case of pressure upon the cord from without, as well as the variability in the height of the disturbance of sensation as seen at different examinations and the apparent improvement in the condition of the bones under the use of bone marrow and Coley's toxin treatment. The patient recovered enough to go out and tend to his business, but within a few months he had a return of the pain and swelling in the region of the 6th, 7th and 11th ribs, tenderness to pressure, with rigid spine and difficulty in moving. The further progress of the case is not reported. The reflexes were normal.

4. **Infantile Scurvy.**—Two cases of this condition are briefly reported by Pierson, who uses them as a text for his discussion of the disease. The etiology is doubtful. The most that can be said is that it follows the prolonged use of some unsuitable diet. It generally occurs in children under 2 years, usually from 6 to 15 months of age, and as far as the pathology is concerned from the general practitioner's standpoint, it is simply a hemorrhage with which we have to deal. The earliest and most common symptoms are swelling of the lower end of the diaphysis of the femur; that is an important point in the diagnosis from rhachitis or rheumatism. The swelling is neither hot nor red, as in rheumatism. The diaphysis is tender, which is not the case in rhachitis. The rest of the pathology of the disease consists in anemia, which is probably secondary, due to hemorrhage, and ulcerative stomatitis. Swelling of the gums is not usual in his experience and will not appear with prompt treatment. Hemorrhage may occur from bowels, nose, into the skin or into any of the internal organs. The first symptom noticed in the child is pain, terror of being touched, pain first in the legs, then the arms and back; next swellings appear, but there is no fever. The diagnosis should be easy, the most common error is to call the case rheumatism or to attribute it to a fall or injury. In rhachitis the swelling is epiphyseal, chronic and painless, and there will be a well-marked rosary when it is well developed as in scurvy. Stomatitis and hemorrhages do not occur in rhachitis. Pott's disease is rare under 2 years, and has no swelling of the extremities. Acute anterior poliomyelitis has a febrile onset with later paralysis. Purpura has no swelling of the extremities or stomatitis. Syphilis is more chronic and the swellings less tender. When anyone is called to a child lying with legs drawn up, dreading to be touched, with swelling of the lower end of the diaphyses of the long bones and where there is anemia, with swollen gums, there is no other diagnosis possible than scorbutus. The treatment is simple. Modified, uncooked milk with orange or lemon juice should be given, one-half to one lemon or orange being used daily with fresh beef juice. He usually gives iron, etc., for the debility and anemia. In severe cases the child must be kept quiet on a frame, but he has not had to resort to this.

6.—See abstract in The Journal of October 5, p. 933.

7. **Teaching of Anatomy of the Nervous System.**—Mettler criticises the former methods of teaching nervous anatomy and suggests biologic methods, showing the evolution of the organs from the lower types and uses the spinal cord as an illustration. He shows how this is evolved from the ganglion system of the invertebrate, and that certain portions recognized as belonging to it, are so only by grace of position, but really are parts of the cerebral anatomy. The importance of putting the function and development of the parts before their mere anatomic location enables the student to grasp more intelligently the relations and conditions than would otherwise be the case.

8. **Pre-Medical Education.**—Coulter describes the premedical course adopted in Purdue University, which was devised to furnish a broad and liberal education and give special and extensive training in subjects which underlie primary professional studies, and, by this co-relation of work, to shorten the time required to obtain a university and medical education. The needs of the student beginning a medical course are considered, but he thinks if the professional school and college can make satisfactory allotment of courses common to both, that time, money and strength would be saved.

9.—See abstract in The Journal of July 13, p. 138.

10. **Pistol-Shot Wounds.**—The characteristics of wounds from pistol bullets are described by Curtin, who speaks of the importance of knowing the distance at which the pistol was held from the victim, which can be most accurately determined in most instances. When the pistol is held tightly against the skin, the entrance wound is large as compared to the caliber of the pistol, the edges of the wound are burned and lacerated and there is no surrounding area of blackening, burning or powder stain. If only one or two inches away, the wound is small, but there is a blackened and scorched area around it and the hair is burned. The farther away the pistol is held, up to a certain limit, the more distinct are the imbedded powder stains. The burning of the skin is present up to a range of six inches; it is variable, however, from three to six inches. The presence of powder grains shows that the range has not exceeded five feet, while smoke stains are constant up to a distance of eight inches. If the pistol has been held at some distance, say ten or twenty feet, the entrance wound is small or rounded. There is no blackening around it or any mark of powder stain. The caliber, the length of the barrel, the amount of powder used and its age are all to be considered. In head cases there is very little bleeding at the entrance wound; oozing of brain matter is present in 50 per cent., but both these may be lacking. One should notice the shape of the entrance wound, whether it is distinctly rounded or whether tunneled or grooved. This is important as determining the relative position of the parties. The entrance wound is smaller than the caliber of the bullet, except when the pistol has been fired in direct contact. This is due to the elasticity of the skin. He has rarely seen an exit wound of pistol-shot wounds

of the head. A 22-caliber bullet fractures the skull, it may or may not lacerate the meninges, and rarely enters the cranial cavity. The 32-caliber penetrates the brain, and if it passes through the squamous portion of the temporal bone, it usually produces a comminuted fracture of the bone opposite. It can be best detected by careful external palpation, and sometimes the extraction of the bullet and bone fragments are effected. The bullets of from 38 to 42-caliber penetrate, and in some cases perforate. Accurate anatomic description of the wound of entrance and exit should be made. It is important in giving legal testimony to know the caliber of the bullet. This is determined by accurately weighing the leaden mass and comparing it with standard weights of the different calibers. The caliber sought for will be that one which corresponds with the weight, exceeding by a few grains the weight of the leaden mass. The pistol should always be examined to see if it had recently been discharged. If so the barrel is lined with a black deposit of sulphid of potassium and charcoal, which, when diluted with water, gives a strong alkaline reaction, has the odor of sulphureted hydrogen and a deep brown precipitate forms on the addition of acetate of lead. If the pistol has not been fired for hours or days, this black precipitate changes from the sulphid to the sulphate of potassium, which gives a neutral reaction in a watery solution, and a white precipitate on the addition of acetate of lead. If the time which has elapsed amounts to weeks or months, traces of the oxid of iron as well as of the sulphate of iron will be found. He calls attention to the wounds made by blank cartilages and it is well to remember that they have been known to penetrate to the depth of two inches. From their action in carrying germs and the frequency of tetanus, attention to their removal and treatment of the wound is imperative.

11. **Strangulated Hernia.**—The condition of strangulated hernia, as considered by Pfister, is entirely within the scope of those conditions which the general practitioner can treat, and no more than a fair modern surgical education is required. No rarely-used instruments are needed, and it is so frequent that every physician should inform himself on the technique of the operation, and, with the simple procedures, have successful results in the vast majority of cases. He goes at length into the description of the operation and says in conclusion that there are many conditions, such as advanced age, where a well-adapted truss will suffice, and therefore not all cases of hernia, aside from severe strangulation, should be operated upon.

12. **Tuberculosis.**—The details of the sanatorium treatment of tuberculosis are given by Richer, who lays stress on the importance of rest, including under this term not only the recumbent position, but quiet and the use of bandages to insure long rest to any injured parts, outdoor life, over-feeding, of which he gives the details, and general medical supervision. This last is the most important. He finds that strychnia in 1/30 gr. doses is very useful and creosote is the most reliable internal antiseptic, except where contraindicated by recent hemoptysis. Cough is easily controlled and night sweats disappear with increased nutrition.

16. **Epilepsy and Dyspepsia.**—The close relation between epilepsy and dyspepsia are insisted upon by Aaron, who believes that gastro-intestinal irritation seems to be the cause to which many cases of epilepsy are traceable. The digestive troubles are frequently latent. It is to be recommended in all cases of epilepsy and suspected stomach disorders, that an analysis of the stomach contents and urine should be made. The examination of the patient is not complete unless the digestive organs are also examined.

17. **Social Aspects of Dermatology.**—The subjects considered in Morris' fourth lecture are the pus bacteria of the skin with their consequences, impetigo contagiosa, boils, carbuncles, etc.; anthrax, sycosis, premature grayness, alopecia, acne, vaccination rashes, and tropical parasites; chigos, guinea worm, elephantiasis, etc. Morris believes in the hygiene of the barber shop. He points out that nearly all hair dyes are injurious.

19. **Climate in Nervous Diseases.**—Pearce finds that neurasthenia, chorea and other diseases are badly affected by high altitudes and high winds. He thinks therapeutic climatic results are dependent upon the states of atmospheric pressure and consequent nutritional modifications. High altitudes favor circulation in the periphery and assist nutrition; the trophic functions may advance too rapidly with too great ascents The neurasthenic, therefore, who must appropriate nutrimen slowly on account of the weakened central nervous system, i not suited to high altitudes. Insomnia is benefited by lowe altitudes, as are also chorea, hysteria and most of the functional diseases. Melancholia and depression are helped b high winds with moderate heat to aid in general bodily metabolism. The orgänic diseases dependent *on the* central o peripheral lesions, perverted *function, as pain and sluggis* circulation, will be helped by altitude. A *greater altitude* i desirable for diseases of the central nervous system, and a lesser altitude the desideratum in the cases of *peripheral diseases*, as in neuritis and vasomotor palsies, exophthalmi goiter, etc.

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23. **Cancer of the Gall-Bladder.**—According to Manton very little advance has been made in our ability to distinguish the morbid conditions in gall-bladder and bile duct. Cancer of the gall-bladder is not nearly so uncommon as generally supposed, and in many cases where adjoining organs have become secondarily affected, the secondary growth has been credited as primary. The etiology is the most important question, however, and we know at present but one incontestable factor, viz., gallstones, hence the value of early treatment of this condition. Manton reports a case of villous cancer of the gall-bladder with secondary invasion of the adjoining structures, which was operated upon, but died shortly after the operation. The interesting points of the case are the long-continued gastric disorder and secondary infection long before symptoms pointing to the original condition were developed, the sudden appearance of the gall-bladder tumor and the extraordinary size of the stones. When we consider the frequency of gallstones and the fact that they may be promotive of malignancy, their importance must not be overlooked. He also reports a case of cancer of the common bile duct and secondary infection of the common gall-bladder, illustrating the peculiarities of the case. His conclusions are: Although primary cancer of the gall-bladder and bile ducts is rare, recent investigations go to show that it is not so uncommon as generally supposed. As a rule, the onset of the condition is insidious; there are no symptoms developed at an early stage of the disease in either locality, with which we are at present acquainted, which will permit of a positive diagnosis being made. When this is possible the disease has already advanced beyond the helpful intervention of surgery. Fever, having been observed in so many other conditions of the liver and adjacent organs, it is of little or no value as an aid to diagnosis. This same may be said of blood examination. Emaciation is frequently absent, and the patient may remain in apparently good health *until toward the termination of the disease.* The absence of malignant disease elsewhere has no diagnostic significance. The only symptom which may perhaps prove of service in forming a provisional diagnosis of gall-bladder and bile duct malignancy seems to be of gastric origin. In two of the cases reported, and in many cases found recorded in the literature of the subject, disorder of the stomach preceded the local symptoms of cancer. Further investigation along this line is desirable, and all protracted disorders of the stomach which can not be positively referred to other causes should be

viewed with suspicion as a possible indication of beginning malignance in the gall-bladder or bile ducts.

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25. **Cleft Palate.**—The importance of the palate rather than the tongue in the production of speech is insisted upon by Makuen, who shows that the function of the former is twofold, and in all voice sounds in which it does not share in the formation of the stop position, it serves as an obturator between the nose and the pharynx, completing the partition between these two cavities, and compelling the outgoing breath to pass through the required particular stop position required for sound. Thus in labials, labiodentals and linguodentals, the sounding breath must pass through the anterior stop position—that is the place where the anterior stop position is made by impeding the moving column of breath in producing the sound; the middle stop position is used in certain articulations and the sound breath must pass through this constricted aperture. The function of the palate is to prevent its passing upward through the nostrils. In the use of the posterior stop position, which is formed by the junction of the velum palati and the dorsum of the tongue, the soft palate serves a double purpose. Its free border rises against the posterior pharyngeal wall, closing the avenue to the nostrils, and its anterior surface, acting in conjunction with the tongue, forms the stop position for the sound. The palate may be defective by perforation of the cleft or paralysis of the muscle. Perforation must be posterior to the stop position in use, to affect speech, though its importance largely depends upon the size. The characteristic speech of cleft palate is well known and the physiology is explainable by the points already elucidated in regard to stop positions. He calls attention to the importance of treating defects of speech early, and if cleft palate is only operated upon after the speech has been acquired the habit will be retained to a greater or less extent, hence the importance of training and education in such cases.

27. **Yellow Fever.**—Waldauer reports experiences which point out to him the probability of transmission of yellow fever by fomites, and, therefore, insists on the importance of continuing the precautions that have formerly been used as regards the transmission of this disease.

30. **Anesthesia and Analgesia.**—The different actions of general anesthetics are here discussed. Local anesthesia is passed by as being rather analgesic than anesthetic. What we understand by anesthesia is producing general intoxication of the body and suspension of consciousness, leaving untouched the vital reflexes of organic life. It is rapid in induction and recovery, and affecting to the least possible degree the tissue, life and function outside of the desired period of suspended sensibility. Search is never ending for the best means of producing such conditions. Magill goes into the physiology of anesthetics to some extent, showing that toxic action increases in the direct ratio to concentration of carbon in the radical of the agent, as does also the rapidity with which anesthesia can be induced. The addition of oxygen to the hydrocarbon molecule probably renders the anesthesia no more toxic, but slower to be induced. The compound formed by a halogen with the organic radical shows greatly increased toxicity, and this toxic factor multiplies directly with the number of elements of the halogen introduced into the molecule, and likewise directly with the relative density or weight of the halogen in question. By reason of the hyperchlorination of its molecule, chloroform is justly proclaimed more toxic than its rival, but an offset compensation is constituted by its correspondingly increased anesthetic energy. The substitution of bromin instead of chlorin in equal numbers of atoms, determines a greater toxicity for the resultant bromid. The halogens of greater atomic weight should increase the toxicity of the molecule so as to render them dangerous in even the minutest doses. The use, however, of monobromid of ethyl is harmless for short administration, but must not be continued; the author gives particular points in regard to the use of this drug. He finds that there is a growing consensus of belief that if chloroform could be relieved from the accidents of primary syncope it would be the best anesthetic. To avoid the point of danger, the cerebral cortex excitement, the English surgeons are employing nitrous oxid to induce the anesthesia. Drs. Hartman and Bourbon and the writer suggested ethyl bromid, and have extensively used this remarkable agent of short narcosis since 1892. The advantages of this method of beginning the anesthesia with ethyl bromid and continuing with chloroform are insisted upon, the importance of perfectly pure ethyl bromid being specially emphasized. For prolongation of unconsciousness, the narcosis induced by this bromid is easily and safely continued with chloroform in very small quantities.

33. **Adrenal Solution.**—Cohen reports a case in which the use of adrenal extract given for asthma seemed to cause excessive edema of the uvula and palate and adjoining regions, inducing also slight edema of the epiglottis. The patient had sprayed the pharynx and nasopharynx vigorously for a prolonged period with suprarenal-chloretone solution. The uvula and palate were scarified, the patient was put at rest, had a drastic purge given, and was advised to use a gargle with lukewarm water aromatized with toilet vinegar. In about an hour the edema began to subside, breathing became easier, and still later the patient became quite comfortable. Traces of edema of the uvula were visible for three or four days. The preparation used was not the one now usually available, but the extract of suprarenal substance with chloretone, which was previously placed upon the market. He has used the adrenal chlorid solution as now prepared with much satisfaction and without any ill effects.

35.—See abstract in THE JOURNAL of October 12, ¶59, p. 1005.

36.—See abstract in THE JOURNAL of September 28, p. 850.

50. **Thrombosis of Central Artery of Retina.**—From a study of a case and the literature, Welt finds that the ophthalmoscopic picture of so-called embolism of the central artery of the retina may be produced by thrombosis of the artery, and that this may take place from the following: 1, endoarteritic changes as in von Michel's case; 2, as a symptom of thrombosis of an entire arterial tract as in Siegrist's case; 3, independently of endarteritic changes, when the blood pressure is reduced and there is a tendency to coagulation of the blood and fatty degeneration of the intima, as in his own case.

51. **Embolism of the Central Artery of the Retina.**—Schweigger questions the frequency of embolism of the central artery, doubt as to which was expressed by him more than thirty years ago, but only in recent years has the anatomic basis been given for these cases of sudden blindness by the demonstration of endarteritis with narrowing of the lumen, which accompanies various forms of retinal diseases. The view that sudden blindness with cloudiness of the disc and retina depends upon embolism arose only because the appearance that was previously termed infiltration, later was termed embolism. Graefe's case teaches that embolism is not immediately followed by cloudiness. On the contrary, the narrowing of the retinal arteries from endarteritis must needs cause slowing of the blood count, which may produce infiltration. This peculiar cloudiness of the retina may develop without circulatory disturbance, as he shows by a case of his own, which he thinks was probably caused by a shot striking the optic nerve.

52. **Bell's Phenomenon.**—This phenomenon, discovered by Sir Charles Bell in 1823, consists in associated movement of the eyeball, cornea turning up and in and then up and out, where it remains while the lids are held closed. It is not a pathologic phenomenon, though it was originally held as such from experience in cases of facial paralysis. The cause of it has not been fully cleared up. Nagel has investigated the matter himself and gives the opinion that the phenomenon is really a normal reflex. Whether we must not concede a simultaneous innervation of the orbicularis and the elevators of the eye dependent upon cortical associations, as has been assumed by Mendel and Negro, is not definitely decided. He thinks it is not impossible that Bell's movement in ordinary closure of the

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25. **Cleft Palate.**—The importance of the palate rather than the tongue in the production of speech is insisted upon by Makuen, who shows that the function of the former is twofold, and in all voice sounds in which it does not share in the formation of the stop position, it serves as an obturator between the nose and the pharynx, completing the partition between these two cavities, and compelling the outgoing breath to pass through the required particular stop position required for sound. Thus in labials, labiodentals and linguodentals, the sounding breath must pass through the anterior stop position—that is the place where the anterior stop position is made by impeding the moving column of breath in producing the sound; the middle stop position is used in certain articulations and the sound breath must pass through this constricted aperture. The function of the palate is to prevent its passing upward through the nostrils. In the use of the posterior stop position, which is formed by the junction of the velum palati and the dorsum of the tongue, the soft palate serves a double purpose. Its free border rises against the posterior pharyngeal wall, closing the avenue to the nostrils, and its anterior surface, acting in conjunction with the tongue, forms the stop position for the sound. The palate may be defective by perforation of the cleft or paralysis of the muscle. Perforation must be posterior to the stop position in use, to affect speech, though its importance largely depends upon the size. The characteristic speech of cleft palate is well known and the physiology is explainable by the points already elucidated in regard to stop positions. He calls attention to the importance of treating defects of speech early, and if cleft palate is only operated upon after the speech has been acquired the habit will be retained to a greater or less extent, hence the importance of training and education in such cases.

27. **Yellow Fever.**—Waldauer reports experiences which point out to him the probability of transmission of yellow fever by fomites, and, therefore, insists on the importance of continuing the precautions that have formerly been used as regards the transmission of this disease.

30. **Anesthesia and Analgesia.**—The different actions of general anesthetics are here discussed. Local anesthesia is passed by as being rather analgesic than anesthetic. What we understand by anesthesia is producing general intoxication of the body and suspension of consciousness, leaving untouched the vital reflexes of organic life. It is rapid in induction and recovery, and affecting to the least possible degree the tissue, life and function outside of the desired period of suspended sensibility. Search is never ending for the best means of producing such conditions. Magill goes into the physiology of anesthetics to some extent, showing that toxic action increases in the direct ratio to concentration of carbon in the radical of the agent, as does also the rapidity with which anesthesia can be induced. The addition of oxygen to the hydrocarbon molecule probably renders the anesthesia no more toxic, but slower to be induced. The compound formed by a halogen with the organic radical shows greatly increased toxicity, and this toxic factor multiplies directly with the number of elements of the halogen introduced into the molecule, and likewise directly with the relative density or weight of the halogen in question. By reason of the hyperchlorination of its molecule, chloroform is justly proclaimed more toxic than its rival, but an offset compensation is constituted by its correspondingly increased anesthetic energy. The substitution of bromin instead of chlorin in equal numbers of atoms, determines a greater toxicity for the resultant bromid. The halogens of greater atomic weight should increase the toxicity of the molecule so as to render them dangerous in even the minutest doses. The use, however, of monobromid of ethyl is harmless for short administration, but must not be continued; the author gives particular points in regard to the use of this drug. He finds that there is a growing consensus of belief that if chloroform could be relieved from the accidents of primary syncope it would be the best anesthetic. To avoid the point of danger, the cerebral cortex excitement, the English surgeons are employing nitrous oxid to induce the anesthesia. Drs. Hartman and Bourbon and the writer suggested ethyl bromid, and have extensively used this remarkable agent of short narcosis since 1892. The advantages of this method of beginning the anesthesia with ethyl bromid and continuing with chloroform are insisted upon, the importance of perfectly pure ethyl bromid being specially emphasized. For prolongation of unconsciousness, the narcosis induced by this bromid is easily and safely continued with chloroform in very small quantities.

33. **Adrenal Solution.**—Cohen reports a case in which the use of adrenal extract given for asthma seemed to cause excessive edema of the uvula and palate and adjoining regions, inducing also slight edema of the epiglottis. The patient had sprayed the pharynx and nasopharynx vigorously for a prolonged period with suprarenal-chloretone solution. The uvula and palate were scarified, the patient was put at rest, had a drastic purge given, and was advised to use a gargle with lukewarm water aromatized with toilet vinegar. In about an hour the edema began to subside, breathing became easier, and still later the patient became quite comfortable. Traces of edema of the uvula were visible for three or four days. The preparation used was not the one now usually available, but the extract of suprarenal substance with chloretone, which was previously placed upon the market. He has used the adrenal chlorid solution as now prepared with much satisfaction and without any ill effects.

35.—See abstract in THE JOURNAL of October 12, ¶59, p. 1005.

36.—See abstract in THE JOURNAL of September 28, p. 850.

50. **Thrombosis of Central Artery of Retina.**—From a study of a case and the literature, Welt finds that the ophthalmoscopic picture of so-called embolism of the central artery of the retina may be produced by thrombosis of the artery, and that this may take place from the following: 1, endoarteritic changes as in von Michel's case; 2, as a symptom of thrombosis of an entire arterial tract as in Siegrist's case; 3, independently of endarteritic changes, when the blood pressure is reduced and there is a tendency to coagulation of the blood and fatty degeneration of the intima, as in his own case.

51. **Embolism of the Central Artery of the Retina.**—Schweigger questions the frequency of embolism of the central artery, doubt as to which was expressed by him more than thirty years ago, but only in recent years has the anatomic basis been given for these cases of sudden blindness by the demonstration of endarteritis with narrowing of the lumen, which accompanies various forms of retinal diseases. The view that sudden blindness with cloudiness of the disc and retina depends upon embolism arose only because the appearance that was previously termed *infiltration*, later was termed embolism. Graefe's case teaches that embolism is *not* immediately followed by cloudiness. On the contrary, the narrowing of the retinal arteries from endarteritis must needs cause slowing of the blood count, which may produce infiltration. This peculiar cloudiness of the retina may develop without circulatory disturbance, as he shows by a case of his own, which he thinks was probably caused by a shot striking the optic nerve.

52. **Bell's Phenomenon.**—This phenomenon, discovered by Sir Charles Bell in 1823, consists in associated movement of the eyeball, cornea turning up and in and then up and out, where it remains while the lids are held closed. It is not a pathologic phenomenon, though it was originally held as such from experience in cases of facial paralysis. The cause of it has not been fully cleared up. Nagel has investigated the matter himself and gives the opinion that the phenomenon is really a normal reflex. Whether we must not concede a simultaneous innervation of the orbicularis and the elevators of the eye dependent upon cortical associations, as has been assumed by Mendel and Negro, is not definitely decided. He thinks it is not impossible that Bell's movement in ordinary closure of the

lids is a reflex, depending upon the closure, but in spasmodically intentional closure of the lids the excitation may reach some higher point of the central nervous system, possibly the cortex.

60. **Uterine Fibroids.**—Noble gives an analysis of 218 cases of fibroids tabulating their complications, which are numerous; some of them fatal, some threatening the life of the patient and some leading to permanent invalidism. He has not seen any similar tables of complications to offer a basis of comparison, therefore he is not sure whether his experience is the same as that of others. Accounts are given of some notable cases; his experience does not support the doctrine that fibroids disappear with the menopause, and he thinks this is not to be expected. In the tables no mention is made of adhesions which were present in numerous cases. The most characteristic symptom of patients suffering from these tumors is anemia, which in some exists in the highest degree. In one case in which hysterectomy was performed the anemia was high—hemoglobin 10 per cent. and red cells 2,325,000. The results were favorable, and, comparing the mortality of fibroids and complications—33 per cent.—with the mortality of the operation—with less than 10 per cent.—he thinks the results very much in favor of operation. The proper treatment of fibroid tumors is their early removal; there may be exceptions to the rule, and each case must be decided upon its own merits. According to his own experience, small multinodular, subperitoneal fibroids in women over 40 are less apt to grow and cause trouble; submucous, and intramural growths in younger women are more apt to develop and need operation. He has met with but few fibroids that do not produce symptoms. Therefore he thinks the percentage of cases is small in which operation is not indicated.

61. **Ureterocystotomy.**—Smith has experimented with the lesions of the urinary bladder and the ureters under tension as would be the case from the resection of a ureter with a loss of length. He has experimented on the cadaver and living dogs. The oblique operation referred to below is as follows: "An incision of an inch long is made, in an antero-posterior direction, through the bladder peritoneum; this is dissected to each side, exposing the underlying musculosa. At the distal end an opening of sufficient size to receive the ureter is made into the bladder. A fine silk ligature is now passed through the muscular wall of the bladder, from one-quarter to three-eighths of an inch above the opening; this also grasps the ureteral wall, penetrating the lumen, at such a distance from the end of the ureter as to permit it later to enter the bladder. Before tying this a second suture is passed in a similar manner just above the bladder opening. After these are tied the end of the ureter is inserted into the bladder, and two additional sutures are applied in a like manner at the edge of the bladder opening, firmly grasping the bladder wall and penetrating the ureteral lumen. The reflected peritoneum is now drawn over the ureter by interrupted silk sutures, placing the ureteral sutures extraperitoneal." The conclusions which he reaches are as follows: "1. It is practicable to anastomose the ureter to the bladder under tension, if the two are securely held in apposition till firm adhesions form. 2. This relation can be attained by the above-described method of oblique implantation. 3. An additional length of one-half to one inch can be safely obtained by traction on the ureter. 4. The presence of a ligature in the lumen of the ureter is not injurious, because Nature conceals it behind new epithelium."

62. **Conservation of Ovaries.**—Beyea reports a case in which conservative operation was performed, leaving the lower portion of the uterus, perhaps 1 or 2 centimeters, in the patient, who had been suffering from large myoma; he also notices other cases in the literature. He suggested the following questions as regards the practicability of this conservative hysteromyomectomy: 1. Of what value are ovulation and menstruation when the possibility of conception is destroyed? He believes that this function of the ovaries is a very important matter whether the uterus exists or not. 2. In what frequency will pathologic changes develop if the ovaries are left in position? He has not seen much to indicate their probability and considers they will be extremely rare. Secondary atrophic changes may take place, but he thinks will probably not occur. In the four cases reported by Abel there was a gradual atrophy or diminution in size, but there were no symptoms of menopause, and the molimina menstrualia were normal. There is, he thinks, no sufficient technical reason why the operation should not be performed nor any cause why it will be more dangerous than an early hysteromyomectomy.

75. **Uterine Hydatids.**—A case of this rare condition is reported by Smith, who defines it as a pathologic condition of the chorion characterized by the existence in the uterine cavity of a large number of translucent vesicles, containing a clear limpid liquid, which closely resembles the liquor amnii. A peculiarity is its proneness to penetrate the uterine walls. The causes are noticed; it begins usually in the multiparæ at the close of the child-bearing period, and is characterized by symptoms indicating the mechanical pressure of the growth, hemorrhage, etc. The prognosis is determined by the frequency and violence of the attending hemorrhage. Immediate evacuation of the uterine contents is always advisable if the diagnosis is established before the appearance of labor.

78. **Cystocele.**—The operation here described by Taulbee is that of dissecting or stripping of the perineum from the bladder by a vaginal operation, packing with gauze, then opening the abdomen and suspending the bladder to the abdominal wall by sutures passing into the muscular tissue but avoiding the mucosa. The difficult feature of the operation consists in the properly divesting the bladder of its peritoneal covering and reapproximation of the same, properly inserting the ligatures and denuding the area which it is desired should adhere to the pelvic or abdominal fascia. Care should be taken to avoid all arteries and veins and not to injure the mucous or submucous layers of the bladder. The ligatures must be so adjusted that tension will be uniform and the denuded surface hold the peritoneum to the abdominal wall. The ureters must not be disturbed. The point of entrance and exit of the needle must conform to the size of the distended bladder, which will vary in different subjects. In another operation which he promises to report in the future the vaginal vault was not opened, the uterus and bladder were suspended through the abdominal opening and drainage carried on through this wound; the result, however, was not so satisfactory. He claims priority in his operation, as he has not found anything in regard to it in the literature.

80. **Infection in Abortion.**—From a review of the literature Porter holds the evidence warrants the following conclusions: "1. That acute infections of the genitalia frequently cause abortion. 2. That many attempts to produce abortion criminally, succeed only because of the infection introduced in the attempt. 3. That habitual abortion is usually the result of chronic infection. 4. That, other reasons aside, examinations of pregnant women should be conducted with careful attention to asepsis for fear of inducing abortion. 5. That aborting women should be regarded by the physician as infected women and that he should as carefully disinfect himself after administering to them as he would after attending cases of puerperal infection, etc., before undertaking other obstetric or surgical cases."

85. **Gastric Ulcer.**—Davis describes the symptoms of gastric ulcer, calling attention to the necessity of examination of the stomach contents, and the recognized need of greater care in studying the urine in these cases, paying attention to the reduced acidity and well-marked alkalinity wave after meals. Also the blood examination; the rare cases where there is a hyperchlorhydria may create difficulties, and, when the tumor can not be felt, a diagnosis may be impossible. He goes into the dietetic and medicinal treatment of these cases, making the rest and milk diet the essentials; a guarded prognosis should always be given. In conclusion he suggests the need of laboratories and the advisability of medical societies organizing and supporting these, so that their advantages can be obtained by the practitioner in general.

87. **Appendicitis.**—Davis ends his paper as follows: "In all cases of chronic appendicitis and those who have had one or more severe attacks, or two or more light attacks, an operation is indicated. 2. In simple cases of appendiceal colic without severe pain, no vomiting, no fever and no rise of pulse rate, immediate operation is not imperative, though the appendix should be removed at the earliest convenience after the attack is over. 3. In acute attacks seen during the first forty-eight hours, accompanied by persistent vomiting, severe pain and rigidity of the right rectus abdominis, immediate operation should be done whether there be much fever or rise of pulse rate or not. 4. In patients seen after the third day of the attack (*a*), if distinctly convalescent, operation may be postponed until the acute symptoms fully subside; (*b*), if not distinctly convalescent, but with an amelioration of all the acute symptoms, immediate operation should be done; the operation may be delayed if the patient can be closely watched and is in suitable surroundings for an immediate operation should there be an exacerbation of the symptoms; (*c*), in patients becoming progressively worse, but not yet moribund or nearly so, operation done at once will save more patients than can be saved by other means; (*d*), moribund patients should be allowed to die without operation."

88.—This article appeared in The Journal, xxxvi, p. 1157.

95. **Sulphid of Calcium.**—Earp finds that this is a valuable remedy in scrofulous cases and in the treatment of boils, felons and acne, and is an adjuvant to mercury and iodid of potassium in specific cases. He quotes letters from Dr. H. A. Hare, who endorses the remedy, and thinks it does good where there is a tendency to the development of pustular conditions of the skin; he also quotes from Dr. D. M. R. Culbreth, who speaks highly of it in scrofulous or glandular conditions when used with discretion and judgment. It should not be used too generally. He thinks it a valuable agent in knowing hands. Dr. G. F. Butler has had but little personal experience, but is convinced that it is an efficient remedy in the class of cases in which it has been recommended by Earp.

97.—See abstract in The Journal, xxxvi, p. 1726.

105. **Apex Pneumonia.**—From a study of cases, including the statistics of Pye Smith and others, Cordell concludes that: "Acute lobar pneumonia affecting the apex is about one-third as frequent as that affecting the base, and of the two apices, the right is affected about three times as often as the left. Involvement of one apex and the opposite base is very rare, and that of the two apices still rarer. Apex pneumonia is not rare in early life, and the relative involvement of the upper and lower lobe corresponds with that in the adult. The general mortality of the apex and basal forms is about the same. Involvement of one apex and the other base does not appear to be a fatal form of double pneumonia, apart from complications. The mortality of uncomplicated apical disease in the child is almost nil. Delirium is not an infrequent prognostic symptom at any age. Intemperance and hyperpyrexia do not increase the relative mortality at the apex. Pericarditis is a fatal complication, and Bright's disease and bronchitis render the prognosis much graver. Delirium is not a more frequent or marked symptom in apex cases in the adult, and seems to occur more often in cases with complications than in the basal form. Intemperance, which is the chief cause of this symptom, does not seem to increase its relative frequency at the apex. There is no positive evidence that delirium is more frequent or prominent in the young with apical pneumonia. Pericarditis is relatively more frequent in apex cases. The same appears to be the case with otitis media. It is not evident in the case of icterus, hyperpyrexia, endocarditis, meningitis, pleurisy, diabetes, or empyema. Gangrene is doubtful. There is no reason (other than site) why apex pneumonia in the adult should be more readily overlooked. Phthisis is rare in connection with acute lobar pneumonia, and the apex form involves no tendency to eventuate in it. Cases of apex pneumonia, even in the adult, sometimes assume the mildest symptomatology."

111.—See abstract in The Journal of September 14, p. 711.

118. **Enuresis.**—Barbour recommends the use of boracic acid in enuresis. He was led to employ it from his desire to render the urine less alkaline and more antiseptic. Later he added salol to the boric acid and the results have been most gratifying, so that it has become his routine treatment for enuresis. Abnormally contracted bladder and conditions like malnutrition, etc., can not be thus benefited. He does not give the dosage in which he has employed the drugs in these cases.

119. **Hydrotherapy in Neurasthenia.**—The method here advocated by Sinkler is as follows: The patient is placed in a hot-water cabinet until perspiration begins, then given the circular or so-called needle bath for one minute, beginning with a temperature of 95, gradually reducing it to 85 with pressure of 20 pounds. The Scotch douche is then applied to the spine, alternating hot and cold water, at a temperature of 105 and 80, under the same pressure. The treatment usually first lasts only 25 or 30 seconds. After a few days the pressure is increased to 25 or 30 pounds, and the extremes of temperature used are much greater, alternating from between 110 and 70. After about two weeks' treatment, in addition to the circular and Scotch douche, the fan douche may be used for the body, abdomen and extremities. The patient's condition should be carefully watched, and if reaction is not good, go slowly in reducing the temperature and increasing the pressure. It is his custom to have the pulse, temperature and respiration taken before and after the treatment, and have the patient weighed also before and after. After the bath, brisk friction is applied with a warm, dry towel, and a few minutes' general surface massage is given; then the patient is sent out for a walk. Taking exercise after the bath is a point which Dr. Baruch insists upon as it promotes reaction. Hydrotherapy does not agree with all neurasthenics and each case should be treated individually and carefully watched. But if the different baths produce an unsatisfactory result it is best to begin with the wet pack and sponging of the spine witth warm and cold water at home. In some cases the drip sheet does more good than either the wet pack or hot bath. Insomnia is a condition greatly benefited by this treatment, also melancholia and other conditions.

125. **Gallstones.**—McCalla reports a case in which after cholecystotomy followed by fistula and apparent obstruction of the gall duct from inflammation due to impacted stones which were removed, he waited until after the peritoneal cavity was sufficiently isolated from the drainage wound and used hot water, temperature 130 F., at a pressure of several feet for some seconds to force an opening in the duct, with success. Later he carried the water pressure as high as twelve feet. The result was that the bile escaped into the intestines, the drainage wound healed up, and the patient recovered her health.

130. **Tuberculosis.**—Gibbes says that he would not be surprised if Koch had a still more startling statement yet, and the one in regard to human and bovine tuberculosis was somewhat of a pioneer balloon. It must be remembered that he has never gone so far as some of his disciples, and that years ago he admitted having seen cases where no tubercle bacilli could be found. Gibbes himself believes that there are two conditions which go under the name of consumption and which should have entirely different treatment. The first is purely inflammatory, beginning as a bronchitis, extending into the lungs as bronchial pneumonia and forming a consolidation varying according to the intensity of the inflammation and the number of infected bronchioles. If the vitality of the patient is low or the intensity of the inflammatory process great, so as to overcome the natural resistance of the part, necrosis results, and after a while a cavity is formed. Careful study of these facts has proven that they are purely inflammatory from first to last and bacteriologic examination fails to reveal the tubercle bacilli in sections of any consolidation of the lungs until these organs begin to break down; then they are usually pres-

ent in large numbers. He asks when these cases become tubercular; he feels sure that it is the stage when the tubercle bacilli appeared and that was when the diseased process had destroyed so much lung that the patient would have died anyway. He maintains that over 50 per cent. of lung cavities are due to bronchial pneumonia. The other form is an entirely different process. The patient commences with stooping and rounding of the shoulders, lassitude and fatigue, dulness of the apex, generally the left. There may be no cough at this early stage, the dulness constantly extends downward and then gradually all the familiar symptoms develop. There is no expectoration in the early stages as the bronchi are not affected. There is no acute inflammatory process extending into the lungs, the diseased process is going on in the lung itself and consists of a new growth, which starting in one apex gradually substitutes itself for the normal lung tissue. We have, therefore, two disease processes, differing in everything but their results, viz., cavitation of the lungs, and they must not be treated in the same manner. The difference should be recognized at once on examining the case. The principal perceptible difference appears to be the existence of moist râles between the edge of consolidation and the functionating lung, indicating a positive bronchial pneumonia instead of a tubercular growth of abnormal tissue.

140. **Medico-Sociologic Problems.**—The evils from vices and mistakes in the raising of children are noticed by Kime, who advocates the sterilization of criminals and the prohibition or restriction of marriage of idiots, insane, tuberculous, epileptics, dypsomaniacs and syphilitics, also the raising of the age of consent and the regulation of child labor. These are a few things which he thinks would favorably affect the development of the race; others will be considered later.

143. **Epilepsy.**—Spratling's article considers the subject of epilepsy, particularly its causation, and finds that nearly 85 per cent. of epileptics became so before they reached the age of 20 and that the four factors of heredity—epilepsy, alcoholism, insanity and tuberculosis—in addition to the cerebral palsy cases of early life, produce 67 per cent. of all cases we meet. The time to treat the epileptic, therefore, is while he is young, and the disease but recently developed. As regards surgical work, he thinks much that has been done ought not to have been done. The great principle of doing no harm should be observed in these cases. Before any operation is undertaken to relieve the epilepsy the case should be studied from all sides, taking into account the hereditary factors, character, duration, etc., of the seizures, and especially the mental condition of the patient at the time. If this has been impaired he doubts the propriety of any operation as a means of cure. He does not wish to create the impression that epilepsy is incurable, for some can be cured and fully 75 per cent. of all cases can be greatly benefited.

147. **Tuberculosis and Trades.**—The question as to what business had best be carried on by tuberculous patients is treated of by Ambler, who thinks that tuberculous patients should not have charge of public halls or places where people assemble. He calls attention particularly to clerks and others that handle food stuffs. The butcher, the thinks, generally possesses an immunity, at least that has been his experience, but bakers are particularly susceptible. While the baking of bread may destroy the tubercle bacillus that has gone into the material before, and in this respect diminishes the danger, this is not the case with green vegetables or those that are eaten in the same condition in which they are purchased. Tuberculous individuals, therefore, should not be employed in market places or in stores generally, and yet there are few physicians who can not cite cases where such are employed in just these occupations.

FOREIGN.

British Medical Journal, September 28.

The Action of Arsenic on the Healthy Tissues of the Skin. Leslie Roberts.—The action of arsenic on the skin is, to some extent, veiled in uncertainty. It is astonishing how readily it can gain access to the body, food, garments, wall paper, etc. In fact whenever chemists wish to test its presence in any body they require previously to satisfy themselves that it is absent in the reagents and all apparatus to be employed. Starting from the scientifically established fact that arsenic possesses like hemoglobin a respiratory property, as shown by Binz and others, we must seek the answer to the question, whether the development of active oxygen within the tissues of the skin is actually the direct cause of morbid changes in these tissues and of the whole train of symptoms which accompany arsenical poisoning? In other words, is the cause dynamic rather than simple and direct and are the extraordinary effects which it produces of a nutritive rather than of an inflammatory order? After these introductory remarks Roberts notes the presence of arsenic in the human tissues and shows that the thyroid gland contains by far the largest proportion. It is also found in very small quantities in the mammary glands, thymus, with traces in the hair, horns, skin, milk and bones, with not a trace to be discovered in the blood or urine, and but a very minute one in the feces. Arsenic is, therefore, with one variable exception found in the areas of quiet oxidation, while all those in rapid oxidation are free from all traces of it. Normal physiologic arsenic is also removed from the body chiefly by keratinized cells of the cu eous epithelium and in very minute quantities by the feces. seems possible that the health of the body, as well as the m tenance of healthy metabolism of the skin, is dependent u the chemical partnership of mercury, iodids, phosphorus, arsenic, largely in the thyroid gland. The effects of arsenic the skin are, 1, pigmentation; 2, hyperkeratinization; 3, quamation; 4, atrophy, and 5, fatty degeneration. The ment is melanin, which appears to be developed within germinal epithelium as the result of arsenical stimulat Hyperkeratinization is the most important sign of arsen poisoning. It involves the strata above the cones and tendency is toward complete arrest of inward growth. Desq mation is another highly characteristic symptom, especially its chronic manifestation. Atrophy and fatty degeneration later phenomena. Gautier infers, and it may be proven sible in the future, that there exist in the body certain fu tional elements. Only a few of these have as yet been covered, but he assumes them to be essential for certain spec functions. Thus manganese is said to be essential to the idizing ferment; iodin to the thyroid; phosphorus to nuclei fluorin to the bone cells. Some of these functional eleme appear to play the principal part, others may be styled subs tution elements; thus arsenic may take the place of ph phorus in relation to nucleins; selenium act for sulphu copper, zinc or manganese may replace iron and so on. I one thing we have to learn, viz., that arsenic is not merely drug possessing curative powers, and that it is not necessar an irritant poison; that it is not a poison in itself, but tl its action is initiated and determined by the tissues the selves; that its effects are essentially of a nutritive or brought about by the agency of active oxygen, and that th effects are beneficent to the organism when the oxidation slow, and injurious when too rapid. The more highly orga ized the cell and unstable its protoplasm and the more ra its metabolic processes, the more rapidly does it feel and ma fest the action of arsenic.

A Note on the Morbid Conditions Simulating Adenoic Wyatt Wingrave.—The conditions that simulate adenoids a according to Wingrave, as follows: 1. Diminutive choanæ a nostrils, which are frequent; usually associated with a l pharyngeal vault and imperfect maxillary development; i mobile velum palati, and a gothic arched palate. The nostr may be uniformly diminutive, or may be normal, while t turbinals are disproportionately large. The former conditi seems to be associated with development of the maxilla whi the turbinal disproportion is especially associated with puber and the balance may not be restored for several years. 2. T low pharyngeal vault which occurs in rickety children, ar often accompanies the former conditions. 3. Paresis of t soft palate and pharyngeal muscles, which may be the resu of any form of nasal obstruction and due to various forms paralysis or neglect, or bad breathing habits. 4. Prominent crest of the vomer or backward prolongation of the nasal septum, which is not rare. This is often associated with other abnormalities. 5. Forward projection of the vertebral column, in which the arch of the atlas is the chief offender, though the second and even the third cervical bodies may often be involved. 6. Retropharyngeal abscess, and here Wingrave calls special attention to the retropharyngeal lymphatic gland, supposed to be only present in early life, and which may be the seat of acute or chronic inflammation, giving rise to swellings that seriously encroach upon the upper passages. 7. Undue prominence of the soft parts covering the internal pterygoid plate and the tuberosity of the palate is not rare, and is associated with general thickening of the mucous membrane. 8. Finally, the postnasal space may be obstructed by webs and neoplasms which can not be described in this communication. These here enumerated include the commonest only of these morbid conditions that simulate or are responsible for the existence and persistence of "adenoid" symptoms.

On the Removal of Tonsils in Adults. H. Lambert Lack.—The removal of tonsils in adults is not such a simple matter as it is in children: 1, on account of the danger of hemorrhage, which is much more common in patients over 15 years of age; and 2, the effect it may have upon the voice. The methods of removal are noticed by Lack, who remarks first on the electric cautery, which is suitable for much enlarged tonsils where removal is not necessitated by recurring tonsillitis and complete removal is undesirable. Tonsillotomy should never be performed in adults with very large tonsils, but in some cases where repeated attacks of tonsillitis occur and the tonsils are too small to be snared, they may be cut away to some extent. Removal with the cautery snare leaves a large charred wound in the throat with increased danger of infection, and is not favorably mentioned. The cold-wire snare is the only method applicable to cases of much enlarged tonsils and seems to have more advantages here than any other method. Enucleation by incision through the mucous membrane between the anterior pillar of the fauces and the anterior border of the tonsils, shelling out the tonsils, is not difficult to perform if care is taken to keep outside the tonsil capsule. General anesthesia, however, is advisable. There is little risk of hemorrhage; the tonsil is completely removed and in some cases of flat tonsil there is no other applicable method. Each case, however, must be judged by itself; there should be no routine method for all.

The Lancet, September 28.

The Diagnosis of Cancer of the Stomach. John C. Hemmeter.—The early diagnosis of cancer of the stomach is rare in the literature; the patients do not usually present themselves in time and decline to be submitted to methods most promising for early diagnosis. Hemmeter says: "The most important information from all the physical signs and symptoms and from the chemical and microscopic investigations may be arranged in the order of their diagnostic value as follows, but I do not desire to be dogmatic in this statement: 1. Chronic gastritis or nervous dyspepsia with progressive aggravation in spite of four weeks' proper treatment. 2. Progressive weakening of the peristaltic power. This can only be confused with the benign stenosis of the pylorus, but in the latter case—the benign stenosis—there is, as a rule, a normal or an excessive amount of hydrochloric acid. In malignant stenosis there is absence of hydrochloric acid and formation of lactic acid. The diagnosis between benign and malignant stenosis may be difficult at the beginning of the clinical observation of any case, but after two to four weeks of observation it should present no difficulties. 3. Progressive diminution in the amount of free hydrochloric acid with steady loss of peristaltic power. 4. The presence of large numbers of atypical and asymmetrical mitoses after gastric curettage, together with characteristic histologic changes in the glands previously described—especially in cases of motor insufficiency. With such clinical indications exploratory laparotomy should be undertaken, and where this step proved the diagnosis to be wrong, in my experience, it was discovered that conditions were present which necessitated operative interference anyway, such as, for instance, motor insufficiency from cicatrices, indurated ulcers, or adhesions. In this schema the diagnostic value of the Oppler-Boas bacilli, tumor, and lactic acid are not referred to because they are late signs. I do not wish to be understood to say, however, that a surgical operation should not be undertaken when these late signs are present. Many times even the presence of a tumor is not a contra-indication to an operation, because a malignant tumor in the stomach may be present, as I have noted on three occasions, and no signs of metastases of infection of the lymph glands were discoverable by a careful search at the necropsy." The diagnosis of carcinoma of the stomach is still in its rudimentary stage. The further development of the subject, the author thinks, does not depend so much upon the bacteriologic investigation as upon the pathologic and physiologic chemistry of the cell.

Syphilitic Affections of the Stomach. W. Soltau Fenwick.—It is thought that while the mouth and rectum commonly suffer from syphilitic lesions the stomach escapes, notwithstanding the evidence to the contrary. Syphilis may affect the stomach in three ways: 1. By the formation of gummata; 2, by producing endoarteritis; 3, by exciting chronic inflammation of the mucosa. Gummata of any size are rarely found. The tumor, which is often multiple, is usually in the submucous tissue of the pyloric region near the lesser curvature. It increases in size and its substance undergoes softening, which usually becomes destroyed and an ulcer is produced which has certain features distinguishing it from the simple variety. It is often irregular, scalloped or triangular. Its edges are thickened and undermined, while its wall and base are shaggy, cheesy, hemorrhagic or covered with firmly-adherent yellow slough. It is usually surrounded by an area of some degree of chronic inflammation and syphilitic manifestations occur in other portions of the abdominal viscera; perforation of the stomach has not been observed in these cases. Obliterative endarteritis affecting the gastric vessels must not be regarded as necessarily an indication of syphilis as it may be observed with chronic simple ulcer and other conditions. The syphilitic variety is rarely a primary complaint, and as far as Fenwick has observed is always associated with gummata in the liver, spleen, pancreas and elsewhere. It chiefly affects the smaller branches of the pyloric vessels and causes inflammatory thickening of the mucous membrane, interstitial hemorrhages and ulcerations. It may produce symptoms of chronic ulceration of the stomach or of dyspepsia followed by hematemesis. Chronic gastritis may be the direct or indirect result of syphilis. The latter is most common, and is due either to embarrassment of the gastric circulation from disease of the liver or spleen or to lardaceous degeneration of the vessels of the stomach, to secondary disease of the kidneys or to the specific cachexia. It does not differ histologically from the usual forms, and like them, usually subsides when the exciting cause has been removed. We should not fall into the mistake of many that every gastric ulcer occurring in syphilitics is due to syphilis. About 5 per cent. of all the population suffer from gastric ulcer from other causes and gastric irritation in a syphilitic subject may possibly be due to injudicious medication. Chronic syphilitic ulcer of the stomach is most common in men between 25 and 40, and in cases where secondary symptoms have been slight or rapidly removed by treatment. Pain is invariably present and nocturnal pain has been considered especially characteristic; this is also true of attacks of emesis during the night, though they may occur with simple ulceration. Anemia is invariably present, and the peculiar sallow complexion of many of the patients is suggestive of specific cachexia. As a rule the complaint fails to respond to ordinary means and may show a tendency to relapse even with anti-syphilitic remedies. Gastritis occurs both in hereditary and acquired syphilis, and is chiefly characterized by its chronicity and intractibility to ordinary treatment. The loss of flesh, anemia and debility are out of all proportion to local symptoms. The mild forms of gastritis occurring in adult life are practically undistinguishable from the alcoholic varieties, but in severe cases the anemia, debility, etc., are suggestive of malignant growths. He has seen a number of cases where cancer has been diagnosed that were relieved by specific treatment, which is a great point of distinction in these cases. The subjects of gastric cancer are very intolerant of mercury and the iodids, which is the reverse with the syphilitic form. The gastric crises of locomotor ataxia occur at irregular intervals and are seldom excited by the ingestion of food. A few days' trial of iodid of potassium will usually clear up any doubt. Rest, of course, and other methods given for ordinary gastric disorders are advisable, but mercury should always be combined with the iodids as the latter are less effective without it. The patient should be warned as to the dangers of a relapse.

Bulletin Medical (Paris), August 17.

Medical Injections of Quinin into the Cerebrospinal Fluid. Jaboulay.—The subarachnoid injection of cocain produces extensive but transient analgesia; when quinin is thus injected, the analgesia is less in extent, but it lasts for two weeks. Jaboulay has found the latter an effective measure for the relief and possibly cure of painful, purulent cystitis; cancers of the rectum; sciatica, arthralgia of the pelvis and hip; neuritis of the leg; pelvic neuralgia; incontinence of urine, and inveterate onanism. He uses the quinin in a concentrated solution, .5 cg. to the cubic centimeter. He has found 5 cg., or even 2.5 cg. sufficient for the curative effect, while this amount is not large enough to cause neuritis or destructive lesions of the cauda equina. He makes the injection in the lumbar subarachnoid space. The analgesia induced includes the genital organs, bladder and rectum. It is accompanied by paresis of the corresponding muscles. With a larger dose it is possible to induce anesthesia of the foot and lower portion of the leg, suggesting that this measure may prove useful in the treatment of Little's disease. He points out that the varying results obtained by various surgeons in spinal cocainization is largely due to the temperature of the solution of cocain. When it is heated to 99.5 F. its diffusion is more rapid. If not warmed, it stays at the bottom of the subarachnoid cavity, and it loses .005 of its density when heated to 104 F. Both cocain and quinin should be used only for medical and not for surgical purposes, as surgical anesthesia can be obtained by simpler measures.

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Some Experimental Experiences with Phototherapy. R. Romme.—Borissoff reports tests with dogs and rabbits which showed that the growth and development was retarded in young animals kept in dark rooms. Even when the largest and strongest animals were transferred to the dark rooms, by the end of the second week their growth was less in proportion than that of the control animals in ordinary light rooms. He compares the stimulus exerted by the light to that of exercise on a muscle. Drigalski found that the electric rays, far from possessing any bactericidal power, predisposed the animal organism to infection, and enhanced its gravity. This fact can not be due to the heat alone, as other animals kept at the same temperature, but not exposed to the electric light, proved much more resistant in all the tests. Strebel has found electric light baths applied as a therapeutic measure, effectual in curing soft chancres, leg ulcers, acne, and, in general, all ulcerating cutaneous lesions; he eliminates the heat rays by passing the light through a vessel containing copper sulphate solution. In rheumatic affections the results were inferior to those obtained by hot air, but the treatment proved more efficacious in arteriosclerosis, in fatty degeneration of the heart, in a few cases of bronchial catarrh, and occasionally in neuralgia. The effect was negative in nephritis.

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Painless Application of Sublimate to Mucous Membranes. De Pierris.—The smarting produced by the application of water to the nasal mucous membrane is due to the lack of isotonicity between the molecular concentration of the blood and of the fluid employed. The smarting can be prevented by adding about 9 per cent. of salt, which renders the fluid isotonic with the blood. When this is done, sublimate can also be added, 1 to 10,000, or even 1 to 4000. It does not induce the slightest pain in this isotonic combination with saline solution, but otherwise it does.

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Nodular Tuberculosis of the Prepuce. J. Sabrazès.—A lump the size and shape of an olive developed in the under surface of the prepuce, about 1.5 cm. above its free edge, in a man of 26. It simulated a sebaceous cyst, but it appeared about a year after the patient had noted dull pains in the renal and hypogastric regions and displayed other symptoms of slowly developing tuberculous lesions of the urogenital organs. Koch's bacillus was discovered in the urine, and also in the caseous masses which formed a large portion of the tumor. It was readily excised, and the patient was thus relieved of his most troublesome symptoms, and was able to resume his occupation.

Treatment of Malaria with Iodin. Regnault.—During an attack of malaria assuming the gastro-bilious form and rebellious to quinin, Regnault took a teaspoonful of a mixture of tincture of iodin and potassium iodid, 4 gm. of each, in 100 gm. of water. This was equivalent to 2 cg. of pure iodin, and he found that the chill was arrested in fifteen minutes and the skin resumed its functions. He has administered it to numbers of patients since, and always with the same result, the prompt subsidence of the attack. A second dose is rarely necessary. Quinin has to be taken before the attack; if it fails to prevent it, the iodin treatment is indicated during or, better still, at the commencement of the attack. On account of the incompatibility of iodin and quinin, the two should not be taken together.

Berliner Klin. Wochenschrift, September 2.

Relations Between Human and Bovine Tuberculosis. P. Baumgarten.—Twenty years ago Rokitansky conceived the idea that it might be possible to arrest or even to cure malignant tumors by the antagonistic action of the tubercle bacillus which was an article of belief at that day. He consequently considered himself justified in taking advantage of this possibility in the treatment of otherwise hopelessly doomed patients with inoperable carcinoma or sarcoma. As the tubercle bacilli of human and of bovine tuberculosis were considered identical, the latter were used for the purpose, and more than half a dozen patients were thus inoculated with considerable amounts of bacilli taken from cattle, and which had proved their extreme virulence in tests on rabbits. Most of the patients survived from several months to over a year, but, after the healing of the pustule induced by the injections, none of them exhibited any signs of tuberculosis, and neither macroscopic nor microscopic tuberculous lesions were discovered at any autopsy, although Baumgarten was himself prosector at the time and all passed through his hands. The inoculations had no noticeable effect on the patients, and the attempted treatment was abandoned. In 1893 one of Baumgarten's pupils inoculated two calves with tubercle bacilli, one in the eye with bacilli from the ox, and the other in the eye and flank with bacilli from tuberculous patients. One calf died in six weeks with all the symptoms and anatomic lesions of diffuse miliary tuberculosis, such as is seen in man. The second calf, inoculated with human tuberculosis, remained healthy, and, when killed several months later, no traces of either human or bovine tuberculosis could be discovered. The control rabbit died of generalized tubercular lesions in about five months. Baumgarten adds that he has not been able to find in the literature a single authentic instance of the transmission of human tuberculosis to cattle. He agrees with Koch that practically there is very little danger to man from bovine tuberculosis, but he is convinced of the identity of the bacilli and that external circumstances are responsible for their differences. The classic picture of human miliary tuberculosis was induced in the calf mentioned, and Tangl and Troje have also demonstrated that certain external factors, such as the fumes of iodoform, may modify the pathogenic properties of human tubercle bacilli to such an extent that they induce the bovine form of tuberculosis when inoculated into animals. The histologic identity of both forms is confirmed by the fact that the caseous process so characteristic of human tuberculosis, occurs likewise in the bovine tubercles, only it is frequently disguised by the rapidly succeeding calcification of the caseous masses. This has nothing to do with the essential disease process, and is often observed in the caseous masses in man. The extent of the calcification in animals is probably due to their larger proportion of calcium salts. The variability in the pathogenic properties of bacteria is a familiar fact. It is more than probable that the bacilli have adapted themselves to their habitat in the course of time, and lost their pathogenic properties for others. But until this is definitely established he observes that there should be no relaxation in the prophylactic measures employed, as further research may lead to opposite conclusions.

Treatment After Operation of Diffuse Purulent Peritonitis. T. Gluck.—The principles on which Gluck bases his after-treatment are exemplified in the smooth and rapid recovery of a man who had been gored by an ox. When he recovered consciousness he found his intestines lying between his knees, covered with blood, ditch water, fecal matters, dirt and sawdust, and exposed to the glare of the direct sunlight for hours. Gluck believes that warmth, moisture and the action of light, favor the healing of peritonitis or any intestinal lesion after an operation. After much experimental research on animals, applying the results to man, he constructed an apparatus in which the intestines are eventrated and received in a warm, moist, glass case, which allows the action of electric light and frequent irrigation. Cardiac insufficiency or paralysis frequently follows the reposition of the intestines after a laparotomy; this danger is entirely obviated, as the intestines are not replaced until all danger of shock is past. He mentions Fenton B. Turck's views with especial approval. After the operation the patient is placed on a water mattress on a frame, to which the box for the intestines is fastened. The whole is then placed in an empty bathtub, and Schäfer's warm water regulator is attached. Gluck has thus treated cases of gangrenous hernia, volvulus after perforation of the appendix, and peritoneal tuberculosis, besides the ordinary diffuse purulent peritonitis. His results have been so favorable that he considers this method as a brilliant progress in surgery, although he claims no priority for it, as it is merely the legitimate outcome of the general trend of abdominal surgery, and as the technique is still far from perfect. In certain uncomplicated cases of diffuse peritonitis, a small laparotomy with lavage of the peritoneum may be sufficient, using a 3 per cent. solution of salt and boric acid or of 1 per cent. salicylic acid, and glass drainage or tamponing. The continuous bath is liable to infect the wound. The abdominal wound should not be sutured at all, but should be left wide open. By this etc., are suggestive of malignant growths. He has seen a number of cases where cancer has been diagnosed that were relieved by specific treatment, which is a great point of distinction in these cases. The subjects of gastric cancer are very intolerant of mercury and the iodids, which is the reverse with the syphilitic form. The gastric crises of locomotor ataxia occur at irregular intervals and are seldom excited by the ingestion of food. A few days' trial of iodid of potassium will usually clear up any doubt. Rest, of course, and other methods given for ordinary gastric disorders are advisable, but mercury should always be combined with the iodids as the latter are less effective without it. The patient should be warned as to the dangers of a relapse.

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Treatment of Malaria with Iodin. Regnault.—During an attack of malaria assuming the gastro-bilious form and rebellious to quinin, Regnault took a teaspoonful of a mixture of tincture of iodin and potassium iodid, 4 gm. of each, in 100 gm. of water. This was equivalent to 2 cg. of pure iodin, and he found that the chill was arrested in fifteen minutes and the skin resumed its functions. He has administered it to numbers of patients since, and always with the same result, the prompt subsidence of the attack. A second dose is rarely necessary. Quinin has to be taken before the attack; if it fails to prevent it, the iodin treatment is indicated during or, better still, at the commencement of the attack. On account of the incompatibility of iodin and quinin, the two should not be taken together.

Berliner Klin. Wochenschrift, September 2.

Relations Between Human and Bovine Tuberculosis. P. Baumgarten.—Twenty years ago Rokitansky conceived the idea that it might be possible to arrest or even to cure malignant tumors by the antagonistic action of the tubercle bacillus which was an article of belief at that day. He consequently considered himself justified in taking advantage of this possibility in the treatment of otherwise hopelessly doomed patients with inoperable carcinoma or sarcoma. As the tubercle bacilli of human and of bovine tuberculosis were considered identical, the latter were used for the purpose, and more than half a dozen patients were thus inoculated with considerable amounts of bacilli taken from cattle, and which had proved their extreme virulence in tests on rabbits. Most of the patients survived from several months to over a year, but, after the healing of the pustule induced by the injections, none of them exhibited any signs of tuberculosis, and neither macroscopic nor microscopic tuberculous lesions were discovered at any autopsy, although Baumgarten was himself prosector at the time and all passed through his hands. The inoculations had no noticeable effect on the patients, and the attempted treatment was abandoned. In 1893 one of Baumgarten's pupils inoculated two calves with tubercle bacilli, one in the eye with bacilli from the ox, and the other in the eye and flank with bacilli from tuberculous patients. One calf died in six weeks with all the symptoms and anatomic lesions of diffuse miliary tuberculosis, such as is seen in man. The second calf, inoculated with human tuberculosis, remained healthy, and, when killed several months later, no traces of either human or bovine tuberculosis could be discovered. The control rabbit died of generalized tubercular lesions in about five months. Baumgarten adds that he has not been able to find in the literature a single authentic instance of the transmission of human tuberculosis to cattle. He agrees with Koch that practically there is very little danger to man from bovine tuberculosis, but he is convinced of the identity of the bacilli and that external circumstances are responsible for their differences. The classic picture of human miliary tuberculosis was induced in the calf mentioned, and Tangl and Troje have also demonstrated that certain external factors, such as the fumes of iodoform, may modify the pathogenic properties of human tubercle bacilli to such an extent that they induce the bovine form of tuberculosis when inoculated into animals. The histologic identity of both forms is confirmed by the fact that the caseous process so characteristic of human tuberculosis, occurs likewise in the bovine tubercles, only it is frequently disguised by the rapidly succeeding calcification of the caseous masses. This has nothing to do with the essential disease process, and is often observed in the caseous masses in man. The extent of the calcification in animals is probably due to their larger proportion of calcium salts. The variability in the pathogenic properties of bacteria is a familiar fact. It is more than probable that the bacilli have adapted themselves to their habitat in the course of time, and lost their pathogenic properties for others. But until this is definitely established he observes that there should be no relaxation in the prophylactic measures employed, as further research may lead to opposite conclusions.

Treatment After Operation of Diffuse Purulent Peritonitis. T. Gluck.—The principles on which Gluck bases his after-treatment are exemplified in the smooth and rapid recovery of a man who had been gored by an ox. When he recovered consciousness he found his intestines lying between his knees, covered with blood, ditch water, fecal matters, dirt and sawdust, and exposed to the glare of the direct sunlight for hours. Gluck believes that warmth, moisture and the action of light, favor the healing of peritonitis or any intestinal lesion after an operation. After much experimental research on animals, applying the results to man, he constructed an apparatus in which the intestines are eventrated and received in a warm, moist, glass case, which allows the action of electric light and frequent irrigation. Cardiac insufficiency or paralysis frequently follows the reposition of the intestines after a laparotomy; this danger is entirely obviated, as the intestines are not replaced until all danger of shock is past. He mentions Fenton B. Turck's views with especial approval. After the operation the patient is placed on a water mattress on a frame, to which the box for the intestines is fastened. The whole is then placed in an empty bathtub, and Schäfer's warm water regulator is attached. Gluck has thus treated cases of gangrenous hernia, volvulus after perforation of the appendix, and peritoneal tuberculosis, besides the ordinary diffuse purulent peritonitis. His results have been so favorable that he considers this method as a brilliant progress in surgery, although he claims no priority for it, as it is merely the legitimate outcome of the general trend of abdominal surgery, and as the technique is still far from perfect. In certain uncomplicated cases of diffuse peritonitis, a small laparotomy with lavage of the peritoneum may be sufficient, using a 3 per cent. solution of salt and boric acid or of 1 per cent. salicylic acid, and glass drainage or tamponing. The continuous bath is liable to infect the wound. The abdominal wound should not be sutured at all, but should be left wide open. By this means the peritoneum can be thoroughly cleansed and the organism relieved of the task of resorbing, eliminating and overcoming the infection. *Restitutio ad integrum* becomes possible, especially in case of tuberculous processes. Gluck uses the apparatus alone or in combination with a loose tampon over which is drawn a gauze bag. When the strings of the bag are drawn up like those of a tobacco pouch, the enclosed intestines are protected. Another method is to pass long silk threads through the fascia and muscles of the wound and tie them, after loosely piling up a mound of gauze in the wound, over which the threads are tied. The box for the intestines might be modified so as to be used even during the operation.

Balancing Extension. F. CRAMER.—The foot of the patient is attached to a weight suspended from a pulley at the head of the bed. The rope passes over the pulley on a frame above; under a pulley fastened to his ankle; over a second pulley above, and finally under a second pulley on the tip of the foot; it then fastens to a hook in the frame above close to the foot of the bed. The rope above the patient's leg thus outlines a W. Another weight is suspended from a pulley at the foot of the bed, not far above the plane on which he lies, and this rope is attached to his heel. The limb is thus in continual extension, but at the same time considerable movement is possible.

Centralblatt f. Innere Medizin (Leipsic), August 24.

Leucocytosis in an Outbreak of Sweat. W. HAMES.—The leucocytes increased by 3000 and 5000, and in some cases to double the previous amount in all the children examined, except those in cachexia, fifteen minutes after either natural or induced sweating. Half an hour after the children were wiped, dressed and transferred to a freshly made bed, the leucocytes had returned to the normal number. About twenty-nine children were tested and the results confirm the function of positive chemotaxis exerted by the hydrotics, and antipyretics in febrile conditions, as well as by the spontaneous or induced sweats in both health and disease.

September 7.

Gymnastics on the Sickbed. H. ZEEHUISEN.—During convalescence from infectious disease, and in conditions requiring rest in bed, great benefit may be derived from systematic gymnastics under the physician's instructions. Convalescence is shortened, and recovery is more complete than without these gymnastics. As a typical example is described the case of an elderly woman, with fatty degeneration, arrythmia and edema of the legs. Medical treatment and rest had not alleviated any of the symptoms. Zeehuisen instituted a series of gymnastic movements as she lay in bed; each were performed but once, and with first one leg and then the other, three for the thigh and one for the knee. At first the movements were passive, then active and then against slight resistance, always in the morning. After two weeks each movement was repeated twice. The success of these measures in the course of two months was remarkable. Pulse, respiration and skin were normal; after a course of treatment at Bad Nauheim the patient has been completely cured for years and to date. These bed exercises are especially beneficial for bedridden obese patients, in certain gynecologic affections, in gout and particularly in traumatic neuroses.

Dermatologische Centralblatt (Berlin), September.

The Bottini Operation for Hypertrophied Prostate. C. STERN.—With chronic, complete retention and a hard prostate, the Bottini operation with Freudenberg's modification of Bottini's original galvanocautery, is a more effective procedure than any other known to date. All it claims to accomplish is to make an opening in the dam which is holding back the urine. It is safer than continual catheterization in the hands of the ordinary patient, but as in the case of a colleague who catheterized himself with ease and absolute asepsis, circumstances may render it superfluous. It should be reserved for cases which are persistently rebellious to ordinary measures.

Deutsche Med. Wochenschrift (Leipsic), September 26.

Treatment of Dysentery with Calomel. A. PLEHN.—The method of treating dysentery by small doses of calomel, inaugurated by Plehn, has abundantly proved its efficacy in his experience during the last three years at Cameroon, and also in South America, where it has been introduced. He orders first two tablespoonfuls of castor oil, which clears up the diagnosis and cleanses the intestines. The next morning he gives a tablet of 3 cg. of calomel every hour for twelve hours, continuing this treatment the next and the following day, suspending it at night. After each tablet the patient must rinse his mouth thoroughly with a solution of tincture of krameria or of salicylic acid. After three days of the calomel he substitutes a tablet of .5 gm. of bismuth every hour for twelve hours, continues this for three days and then reduces the amount to 6 gm. a day, until all pathologic symptoms have vanished, when he continues with 3 gm. a day for a time longer. A number of cases are described in detail showing the efficacy of this method of treatment. The calomel probably acts as a disinfectant. The germs causing the dysentery develop throughout the large intestine, but it is the products of their metabolism which cause the pain, the increased secretion, the disturbance in the intestinal resorption and the intense irritation of the intestinal walls. Under the action of these chemical toxins the mucous lining is destroyed, ulcerative processes develop and secondary infection is liable to occur, frequently due to the amoebæ. Calomel given continuousl as described, kills the germs and the production of their toxi is arrested. The acute irritation of the intact mucous mem brane rapidly subsides. If the ulcerations are already in prog ress, they may require some time to heal, but healing is pro moted by a strictly fluid diet and the bismuth. Certain live affections subsequent to slight intestinal infections, may lik wise be due to the toxins secreted, as they rapidly recove under this calomel treatment of the primary intestinal infe tion. He is inclined to believe that the same treatment migh prove effective in early cases of typhoid fever and in choler but he has had no opportunity to test it in these diseases. H recommends others to try six or eight doses of calomel ever two hours in mild cases of dysentery.

A Case of Tuberculosis of the Knee Benefited by Koch' New Tuberculin. BRUNZLOW.—The patient was a lad of 1 who had suffered from a tubercular affection of the knee sinc 1897. After surgical treatment of the joint, the condition became aggravated, and the general condition grew rapidl worse. He was then treated with tuberculin (T. R.), com mencing with 1/1000 mg., and the beneficial effect was rapidl apparent, as the lad gained four and one-half pounds in th first week. He was treated with four separate courses o tuberculin, in two years, gradually increasing the dose fron .0005 mg. to 2 mg. each time, carefully avoiding reaction an waiting until every trace of induced elevation of temperatur had vanished before injecting the tuberculin again. The bene fit was apparent in the rapid increase in weight and th disappearance of all local symptoms. At present, the joint i normally movable and free from pain, but the muscles are a little weaker than in the other knee, and a faint grating sound can be heard on movement. There is still a slight reaction to a test-injection of old tuberculin, and consequently the case is not a cure. However, the results show such improvement in every respect, with constant gain in weight, that they should encourage others to try tuberculin as a therapeutic measure in rebellious cases of surgical tuberculosis.

Treatment of Exudates. E. HOMBERGER.—The fluids of the body always seek to maintain an osmotic balance. If we assume that the blood and an exudate or transudate have the same osmotic tension, dilution of the blood will be followed by the passage of the excess of water into the exudate, reducing the osmotic tension of the latter, while the concentration of the blood increases in proportion. As the blood becomes more concentrated, the exudate is reabsorbed under the action of the same laws of osmosis. Homberger states that by utilizing these principles we have an effective means at our disposal of promoting reabsorption of exudates and transudates. The blood can be diluted by the administration of water. It is absorbed more readily if taken in small amounts in an empty stomach, and most rapidly of all, when the water is slightly acid and weak in salts. Nature demands water in infectious fevers and lemonade not only relieves the thirst, but has a directly curative influence on the disease by promoting osmosis. The benefit of saline infusion is directly due to the water. In diabetes, the sugar in the blood causes absorption of water from the tissues, in Nature's attempt to restore the balance of osmotic pressure. The overfilled vascular system empties the excess of water into the kidneys, while Nature calls for more water to supply the demand, thus explaining the polyuria and thirst in diabetes. Homberger concludes by stating his belief that in therapeutics the internal use of water is as important as its external use, and that it can be harmful only in exceptional cases. Simmonds announced last year that in none of the autopsies which he has conducted was he able to detect any indications that the infusion of saline solution had been responsible for dilatation of the right ventricle. The great objection, that a weak heart is not able to stand it, is thus shown to be unfounded.

Lamp for Photography on a New Principle. Sophus Bang.—All the lamps hitherto used for phototherapy were originally constructed for optical purposes. None of them aimed to produce a cold light, rich in ultra-violet rays. Bang announces that he has devised a lamp in which the materials were selected for their properties in the spectrum. He finds iron most suitable for the electrodes, instead of carbon tips, and keeps it cool by a circulation of water inside. The iron tips do not generate rays, and the light is actually an arc light, as the rays are generated in the space between the tips. Its bactericidal power is sixty times greater than that of the ordinary arc light. Its effect on the skin is likewise much more intense. Five minutes' exposure at a distance of one yard will induce a severe erythema of several days' duration. For local treatment, he has designed a small lamp, which, with the compressor, is not much larger than an ordinary tablespoon. The whole is placed directly on the skin, as there is so little heat that a distance of 1 to 1.5 cm. is ample. With 5 amperes and 40 volts, it is possible to obtain in five minutes as strong a reaction over 10 sq. c., as has hitherto been obtained with an apparatus of 60 amperes and 50 volts in one and one-quarter hours. As the light is so powerful, neither concentration nor automatic regulation is required, and it can thus be very cheaply constructed.

Three Cases of Pure Hereditary Ataxia. E. Weber.—A family is described in which three children present the typical clinical picture of Friedreich's disease. The parents are healthy and well-to-do, and have two other healthy children. The affection commenced about the sixth year in each, and can be observed in the three patients in the incipient, established and advanced stages. The youngest is 7, and the oldest 18 and bedridden. The ataxia in his case is more pronounced than Weber has ever witnessed in any tabetic subject.

Value of Colchicin in Gout. K. Kuester.—Since restricting himself to a more vegetable diet and avoiding meat, Kuester has found that he suffers less with gout, to which he is naturally and hereditarily predisposed. An occasional attack still occurs, and he finds relief in colchicin alone. He takes it in pills, 5 cg. colchicin to 1.5 gm. each of licorice extract and powder, to make 20 pills. Two of these will frequently abort a mild attack, and four pills in the course of two days reduce the symptoms very materially and shorten the course of the attack. Thus, after reclining for one day, he is soon able to attend to his practice, and is agile again in eight to ten days, with all the gouty deposits absorbed. Without the colchicin, he has to recline for two weeks and is stiff and aching for three weeks longer. His personal experience has been confirmed by that of gouty patients for whom he has prescribed the colchicin.

Treatment of Meniere's Symptom-Complex. G. Heermann.—Certain symptoms in this affection can be traced to the ears, others to the nerves, and others to a general cause. In order to differentiate and apply appropriate treatment, Heermann has been appealing to his colleagues to report their experiences. He sends a blank circular on demand and gratefully receives all communications addressed to him at Kiel. During the acute attacks he states that a position in which the vertigo is attenuated can almost always be found, but the patient is unable to find it for himself. He must be made to recline, with the upper part of the body slightly raised and the head turned toward the sound side. Both the nausea and the vertigo become much attenuated when the correct position is found. The bromids are the only internal remedies of any value. In case of syphilitic antecedents specific treatment is indicated. If there is a history of a preceding chronic, suppurating otitis media, the semi-circular canal must be opened up, and a cholesteatoma is sometimes found. The Ménière symptoms may appear during the course of a dry catarrh of the middle ear. Besides the usual treatment of this condition, Heermann advocates pilocarpin. He commences with one-tenth of a Pravaz syringeful of a 2 per cent. solution, increasing by one-tenth daily until copious sweating is induced; usually less than seven-tenths are required. The patient must stay in bed while sweating. The pilocarpin banishes the vertigo, and frequently improves the hearing, but is contraindicated in case of elderly or corpulent persons. In apoplectiform deafness it has worked wonders in his experience. He also found thyroid treatment beneficial in two cases with goiter. The patient may have forgotten his old ear affection when the Ménière symptoms appear. The vertigo in such a case is liable to be attributed to the stomach. There is frequently pronounced stagnation in the vascular system and constipation. Appropriate local treatment and out-of-door exercise may improve the hearing with the general health, and the vertigo vanishes. He describes several instructive examples. One patient, for instance, with bilateral chronic catarrh of the middle ear, exhibited the Ménière symptoms and deafness during and after a pregnancy. Treatment of the ear and twenty-one injections of pilocarpin, with exercise, resulted in the cure of all the symptoms including the deafness. They all returned during another pregnancy, but yielded as before. When the Ménière symptoms develop on a neuropathic basis, operation on the ear is liable to be distinctly injurious. It is in these cases that quinin, electricity and similar measures score their triumphs. Quinin should be completely avoided by the aurist, as well as the salicylates, as they expose the functions of a diseased ear to the most serious dangers.

To Test the Permeability of the Nose. F. Bruck.—The Journal described Glatzel's mirror, in the issue for September 28, p. 874. Bruck points out that it tests the permeability of the nose during expiration only, while it affords no information in regard to inspiration. The latter may be hindered by a floating polyp, sucking in of the nostrils or other impediment affecting inspiration alone.

Therapeutische Monatshefte (Berlin), August.

Treatment of Scrofulosis and Tuberculosis by Inunctions of Cod-Liver Oil. B. Rohden.—For five years Rohden has been using a mixture of 50 per cent. deodorized cod-liver oil, balsam of Peru, and oil of cinnamon, lemon and thyme, combined with lanolin, glycerin and an alkali, to rub into the skin of scrofulous and tuberculous children. He reports extremely satisfactory results from this inunction with "dermosapol," as he calls the mixture. It is a stable, aromatic preparation, of which every particle is absorbed. It is rubbed into the chest and back in the morning, and into the abdomen, buttocks and limbs at night. About 100 gm. are required for ten or twelve days. The cells and tissues are influenced by the cod-liver oil and the lymph becomes saturated with the ethereal oils and the balsam. Tuberculosis on a scrofulous basis is exceptionally benefited by this treatment, especially glandular and joint affections and lupous lesions.

Artificial Respiration in Treatment of Bronchitis. Heermann.—An apparently moribund, six-months' infant in progressing bronchitis was saved by artificial respiration, including Schultze's swinging and pressure on the false ribs, maintained for two hours. Since then Heermann has ordered artifical respiration in every severe case of bronchitis in a child. The nurse or the parents are instructed to apply slight pressure with one hand on the false ribs during expiration, changing the hand frequently. Expectoration is promoted, respiration deepened, the rapid breathing becomes slower and the pulse stronger. The expulsion of accumulated secretions is promoted by this measure, and the threatening paralysis of the muscles of respiration averted. The procedure is repeated several times a day for half an hour at a time.

Suturing the Tissues Without Foreign Material. F. Schultze.—The conditions of success with the method of suturing which Schultze has been using with great satisfaction for two years, are complete hemostasis, and normal elasticity of the skin. The lips of the wound are coaptated and a row of Roser's torsion forceps is applied .5 to 1 cm. apart to hold the lips together. Cotton-collodion dressings are then applied in the interspaces. As soon as the collodion is dry, the forceps are removed, and a protecting bandage applied over the whole.

September.

Dietetic Treatment of Pregnancy. Prochownik.—Delivery can be almost certainly much facilitated in women with a small conjugata vera, not less than 8 cm. in diameter, by restricting the fluids to 500 c.c. a day, with 130 to 160 albumin, 80 to 130 fats and 100 carbohydrates, the total averaging 1800 to 2000 calories. Prochownik has now a record of 17 personal cases, and 31 collected in the literature, with a total of 62 births, all the children being alive at the date of publication. The previous births had been extremely difficult and tedious, and many of the children had died. On the above diet for the last ten or twelve weeks all the deliveries were much easier. With a conjugata of less than 8 cm. artificial premature delivery is the only resource and the precautionary diet is unnecessary. In women with normal pelves, but debilitated from any cause, congenital chlorosis, hemorrhages, etc., he commences dieting treatment early in the pregnancy, with repose in bed or reclining out of doors, for several weeks, better away from the home environment. The patients are encouraged to take as much albumin, fats, cream and fluids as possible, with frictions, gentle massage and small amounts of iron. To develop the lacteal secretion in women whose mothers and grandmothers had been unable to nurse their children, he orders a diet rich in carbohydrates, with massage of breasts, and reports 7 cases in detail, showing benefit in 2. He also tabulates 5 cases of obesity in which he forbade soups, sweets, etc., and ordered exercise, massage of the entire body, except the stomach, and restricted the fluids to 500 or 600 c.c., with 120 to 130 gm. bread and other food to taste, but not in large amounts nor much at a time. He commences this dieting treatment of pregnant women with a tendency to obesity, as early as possible. He pleads for a more general study of this subject. The possibility of its efficacy is now demonstrated beyond question. It only remains to work out the details. He states that women in tropical climates, with their vegetable and fruit diet, usually bear children more easily than the women of the north, although the pelvis averages smaller in tropical races.

Wiener Med. Wochenschrift, August 31.

Serum Treatment of Erysipelas. V. Jez.—The serum is derived from the same patient on whom it is used. It always induces a reaction, evidenced by a rise of temperature after one or two hours, and rapid improvement of all the symptoms. The number of leucocytes in the blood increases while the toxic substances are eliminated in the urine, as shown by its increased toxicity. No after-effects were noted in the ten cases in which Jez tried this serum treatment. If 5 to 10 gm. are not enough to induce the reaction, he increases the amount. The serum is taken from a blister artificially produced for the purpose.

Epilepsy Cured by an Intercurrent Disease. M. Turnowsky.—The three cases related all occurred under Turnowsky's personal observation, continued for many years. The first was a man of 38, who had from fifteen to twenty seizures on some days, the epilepsy dating from his seventeenth year, until 1887, when it was completely cured by an attack of croupous pneumonia. The second was a woman of 34, with five or six seizures during the month, between the age of 20 and 25. At this time she contracted pneumonia, and has had no seizure since. The third patient was a boy of 12, who used to have ten to fifteen seizures a day between the age of 2 and 6. At the latter age he contracted scarlet fever, and since then has been completely cured of his epilepsy. The cure in these cases has persisted respectively fourteen, ten and six years. He concludes with the suggestion that it would not be such a great risk to send an epileptic to a locality where pneumonia was endemic, or to expose an epileptic child to scarlet fever, as these cases, carefully observed, in addition to those on record in the literature, would fully establish the possibility of the disappearance of epilepsy after an intercurrent infectious disease.

Janus (Amsterdam), September.

Progress in the History of Medicine. H. F. A. Peypers.—"The universities in France and Germany are now discussing measures to give the history of medicine a larger place in the curriculum. In America many of the principal medical schools have a chair for the instruction of history of medicine. Dr. Sarah Hackett Stevenson, who is professor of obstetrics, ethics and the history of medicine at the Woman's Medical School, at Chicago, interests us particularly, as the combination of ethics with the history of medicine is such an excellent idea. This association is as rare in medical curricula up to the present time, as the presence of a woman in the faculty." Havana has a professor for the history of medicine and another for the history of pharmacy. From Australia comes an important work by Dr. W. J. Stewart McKay, entitled "History of Gynecology Among the Ancients." It seems remarkable to receive a serious work on the history of medicine from such a remote point as Sydney, so far from the universities and reference libraries of the old world.

Extragenital Endemics of Syphilis in Hungary. E. Weyner.—Three of these endemics are on record; one was traced to a drinking cup used by the children of a school in which one of the teachers was syphilitic. In both the others, the infection occurred by arm to arm vaccination. In the latest endemic, 270 persons were infected by this means.

Gazzetta Degli Ospedali (Milan), September 22.

Koch's Views of Tuberculosis. E. Maragliano.—The destructive action of the gastric juice and the auto-sterilization of the intestines recently promulgated by Kohlbruegge, explain the rarity of tuberculosis of the intestines from food infected by the tubercle bacillus, as well as from the bacilli in the sputa swallowed by tuberculous patients. This argument has therefore little value as cited by Koch to sustain his theory of the non-transmissibility of bovine tuberculosis to man. Maragliano has established that killed cultures of human tubercle bacilli cause intense toxic phenomena in cows and goats, showing that these animals are susceptible to the toxins of human tuberculosis, and, therefore, necessarily to its bacilli. Michelazzi has recently published the results of study of the prolonged use of sterilized milk from tuberculous cows. He demonstrates that the milk from a tuberculous animal, even if the teats are intact, and no bacilli pass into the milk, is yet extremely injurious, as the serum of the milk is toxic, even more toxic than that of the blood. The amount of toxin in the milk varies with the severity of the tuberculous process, but its toxic properties are unaltered, and are not affected by sterilizing the milk by heat. A chronic intoxication of the organism ingesting the milk is determined in time. His experiments at Pisa indicate that the profound marasmus accompanying tuberculosis in man and animals, is the result of the action of the toxins resulting from the presence of the tubercle bacilli, thus confirming Maragliano's assertions that tuberculosis is preeminently a toxicosis.

Serotherapy of Whooping Cough. T. Silvestri.—About 120 c.c. of blood were drawn from the arms of two children recovering from whooping cough. It was mixed with equal parts of saline solution and shaken up with 1 per cent. of chloroform and set aside to settle for twenty-four hours. It was then filtered and from 15 to 22 c.c. were injected into five other children with whooping cough. In two very severe cases the injection was repeated after five days. The effect of the serum treatment was evident at once. The general symptoms rapidly vanished and the cougn and broncho-pneumonic phenomena also subsided completely in from eight to eleven days.

Giornale Delle Accad. di Med. di Torino, July.

Severe Hemorrhage from the Ear. G. Gradenigo.—Rohrer has recently related a case of severe hemorrhage from the ear, due to varices or bluish dilatations of the veins on both tympanic membranes. In Gradenigo's case the hemorrhage occurred during a paracentesis of the membrane on suspicion of acute otitis from the symptoms observed. There was no inflammation, but the incision opened an angiomatous tumor, with threatening arterial hemorrhage. The tumor was located just inside the membrane and may have been an aneurysmal dilatation of some abnormally diverging artery, but was more probably an angiomatous tumor with extensive dilatation of the vessels.

Hot Baths in Pneumonia. A. Bormans.—When the fever goes above 39.5 C. (103 F.), Bormans places the patient in a bath tub of water at 40 C. (104 F.), first applying an ice-cap to his head and cooling the face with ice. As soon as the patient is immersed, water is added to raise the temperature of the bath to 44 C. (111 F.) and the temperature is maintained at this point for fifteen minutes, when the patient is returned to bed. The effect is extremely beneficial; the relief is almost immediate. The patient sweats profusely and his agitated delirium is quieted. In 12 cases thus treated, the crisis occurred on the fourth day in 3, the fifth day in 1, the sixth day in 4, the seventh day in 3, and the eighth day in 1. One patient died the eighth day with cerebrospinal meningitis. The afflux of blood to the periphery relieves the circulation in the lungs and the sweat eliminates a large proportion of the toxins. These hot baths are contra-indicated, of course, in case of heart disease or arteriosclerosis, but in all other conditions the benefit derived should cause them to be generally adopted. Bose recommends hot baths in all the acute infectious diseases of children, but Giappone was the first to advocate baths of this temperature. Ortner reports excellent results from them in his "Manual of Therapeutics," published at Vienna last year. He orders them in bronchitis and pneumonia. The blood pressure usually drops slightly during the bath, but rises later, and surpasses what it was before the bath. The temperature may rise a fraction of a degree, and the pulse is slightly increased. In a few cases the blood pressure remained slightly below what it was before the baths, but the patient's euphoria and sweat were pronounced in every case.

New Patents.

Patents of Interest to Physicians, issued September 17 and 24:

683,012. Optical instrument. Henry H. Hill, St. Louis, Mo.
682,936. Hernial truss. George V. House, Mount Vernon, N. Y.
682,854. Stopper for water-bags. Charles E. Longden, Hampden, Conn.
682,832. Speculum. J. Gordon McPherson, Toronto, Canada.
682,638. Eye-tester. Henry D. Reese, Abbeville, S. C.
682,650. Bed-pan. George Thornton, F. D. Freeborn and W. Hi[illegible]
[illegible] ppository. Henry H. Foringer, Eria, Pa.
[illegible] Arthur E. Bonesteel, Central City, Colo.
[illegible] appliance. Patrick F. Cassidy, Boston, Mass.
683,044. Bed-pan. Richard E. Holder, Columbus, Ind.
683,216. Therapeutic battery. Joseph A. Minturn, Indianapolis, Ind.
683,192. Apparatus for assisting the hearing. Alfred F. Watch. Philadelphia, Pa.

Books Received

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review. as dictated by their merits, or in the interests of our readers.

Dictionary of Philosophy and Psychology, Including Many of the Principal Conceptions of Ethics, Logic, Anesthetics, Philosophy of Religion, Mental Pathology, Anthropology, Biology, Neurology, *Physiology*, Economics, Political and Social Philosophy, Philology, Physical Science, and Education, and Giving a Terminology in English, French, German and Italian. Written by Many Hands and Edited by James Mark *Baldwin, Ph.D. (Princeton)*, Hon. D.Sc. (Oxon.), Hon. LL.D. (Glasgow), Stuart Professor in Princeton University. With the Co-operation and Assistance of an International Board of Consulting Editors. In Three Volumes, with Illustrations and Extensive Bibliographies. Vol. I. Cloth. Pp. 644. Price, $5.00. New York: The MacMillan Co. 1901.

The American Illustrated Medical Dictionary. For Practitioners and Students. A Complete Dictionary of the Terms Used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry and Kindred Branches, Including Much Collateral Information of an Encyclopedic Character, Together with New and Elaborate Tables of Arteries, Muscles, Nerves, Veins, etc.; of Bacilli, Bacteria, Micrococci, Streptococci; Eponymic Tables, Diseases, Operations, Signs and Symptoms, Stains, Tests, Methods of Treatment, etc. By W. A. Newman Dorland, A.M., M.D., editor of the "American Pocket Medical Dictionary." Second Edition, Revised. Leather. Pp. 770. Price, $4.50 net. Philadelphia and London: W. B. Saunders & Co. 1901.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Assisted by H. R. M. Landis, M.D., Assistant Physician to the Out-Patient *Medical Department of* the Jefferson Medical College Hospital. Volume III. September, 1901. Diseases of the Thorax and Its Viscera, Including the Heart, Lungs, and Blood Vessels—Dermatol[illegible] of the Nervous System—Obstetrics. [illegible] per annum, in four volumes, $10.00. [illegible]: Lea Brothers & Co. 1901.

An International System of Electro-Therapeutics. For Students, General Practitioners, and Specialists. By Numerous Associated Authors. Edited by Horatio R. Bigelow, M.D., Permanent Member of the American Medical Association. Second Edition. Revised and brought up to date, with several New Departments, Embodying the Most Recent Developments of the Science. Edited by G. Betton Massey, M.D., Ex-President and Fellow of the American Electro-Therapeutic Association. Thoroughly Illustrated. Royal Octavo. Pp. x-1147. Price, $6.00. Philadelphia: F. A. Davis Company. 1901.

Pathological Technique. A Practical Manual for Workers in Pathological Histology and Bacteriology, Including Directions for the Performance of Autopsies and for Clinical Diagnosis by Laboratory Methods. By Frank B. Mallory, A.M., M.D., Assistant Professor of Pathology, Harvard University Medical School; and James H. Wright, A.M., M.D., Instructor in Pathology, Harvard University Medical School. Second Edition, Revised and Enlarged. With 137 Illustrations. Cloth. Pp. 432. Price, $3.00 net. Philadelphia and London: W. B. Saunders & Co. 1901.

A Treatise on the Acute, Infectious Exanthemata. Including Variola, Rubeola, Scarlatina, Rubella, Varicella, and Vaccinia, with especial reference to Diagnosis and Treatment. By William Thomas Corlett, M.D., L.R.C.P. Lond. Professor of Dermatology and Syphilology in Western Reserve University. Illustrated by 12 Colored Plates, 28 Half-tone Plates from Life, and 2 Engravings. Pages viii-392. Sold only by Subscription. Price, Extra Cloth, $4.00 net, Delivered. Philadelphia: F. A. Davis Company. 1901.

Manual of Chemistry. A Guide to Lectures and Laboratory Work for Beginners in Chemistry. A Text-Book Specially Adapted for Students of Medicine, Pharmacy, and Dentistry. By W. Simon, Ph.D., M.D., Professor of Chemistry in the College of Physicians and Surgeons of Baltimore. Seventh Edition, Thoroughly Revised. With 66 Illustrations, 1 Colored Spectra Plate, and 8 Colored Plates, Representing 64 Chemical Reactions. Cloth. Pp. 613. Price, $3.00. Philadelphia and New York: Lea Brothers & Co. 1901.

Nervous and Mental Diseases. By Archibald Church, M.D., Professor of Nervous and Mental Diseases, and Head of Neurological Department, Northwestern University Medical School, and Frederick Peterson, M.D., Chief of Clinic, Department of Nervous and Mental *Diseases, and Clinical Lecturer on Psychiatry, Columbia* University. Third Edition, Revised and Enlarged. Cloth. Pp. 870. Price, $5.00 net. Philadelphia and London: W. B. Saunders & Co. 1901.

Human Physiology. Prepared with Special Reference to Students of Medicine. By Joseph Howard Raymond, A.M., M.D., Professor of Physiology and Hygiene in the Long Island College Hospital, *New York City. Second Edition*, Entirely Rewritten and Greatly Enlarged. 443 Illustrations, 12 of them in Colors, and 4 Full-page Lithographic Plates. Cloth. Pp. 668. Price, $3.50 net. Philadelphia and London: W. B. Saunders & Co. 1901.

International Directory of Laryngologists and Otologists. Containing Names *and Addresses* of Practitioners Engaged in the Study and Practice of Laryngology and Otology. Compiled by Richard Lake, F.R.C.S., Eng. Published under the Auspices of the Journal of Laryngology, Rhinology and Otology. Second Edition, Revised and Enlarged. Leather. Pp. 124. Price, $1.25. London: Rebman, Ltd. 1901.

Electricity in Medicine and Surgery, Including the X-Ray. By William Harvey King, M.D., Editor of the Journal of Electrotherapeutics. In Two Parts. With a Section *on Electro-physiology*, by W. Y. Cowl, M.D., Berlin, Germany, and a Section on the Bottini Operation, by Albert Freudenberg, M.D., Berlin, Germany. Cloth. Pp. 296. Price, $3.50. New York: Boericke & Runyon Co. 1901.

Dose-Book and Manual of Prescription-Writing: With a List of the Official Drugs and Preparations, and the More Important Newer Remedies. By E. Q. *Thornton, M.D., Ph.G.*, *Demonstrator* of Therapeutics, Jefferson Medical College, Philadelphia. Second Edition, Revised and Enlarged. Leather. Pp. 362. Price, $2.00 net. Philadelphia and London: W. B. Saunders & Co. 1901.

Transactions of the American Electro-Therapeutic Association. Complete account of Ninth Annual Meeting held at Washington, D. C., September 19, 20 and 21, 1899; also Tenth Annual [illegible] York City, September 25, 26, and 27, 1900. [illegible]-391. Price, Extra Cloth, $2.00 net, De[illegible] F. A. Davis Company. 1901.

A Practical Treatise on Diseases of the Skin. By John V. Shoemaker, M.D., LL.D., Professor of Skin and Venereal Diseases in the Medico-Chirurgical College and Hospital of Philadelphia.

Fourth Edition, Revised and Enlarged with Chromogravure Plates and Other Illustrations. Cloth. Pp. 892. Price, $5.00. New York: D. Appleton & Co. 1901.

A Manual of the Practice of Medicine. By George Roe Lockwood, M.D., Professor of Practice in Woman's Medical College of New York Infirmary. Second Edition, Revised and Enlarged. With 79 Illustrations and 20 Full-page Plates. Cloth. Pp. 847. Price, $4.00 net. Philadelphia and London: W. B. Saunders & Co. 1901.

A Text-Book of Obstetrics. By Barton Cooke Hirst, M.D., Professor of Obstetrics in the University of Pennsylvania. Third Edition, Thoroughly Revised and Enlarged. With 704 illustrations, many of them in Colors. Cloth. Pp. 873. Price, $5.00 net. Philadelphia and London: W. B. Saunders & Co. 1901.

A Laboratory Course in Bacteriology. For the Use of Medical, Agricultural, and Industrial Students. By Frederick P. Gorham, A.M., Professor of Biology, Brown University. With 97 Illustrations. 12mo. Volume. Cloth. Pp. 198. Price, $1.25 net. Philadelphia and London: W. B. Saunders & Co. 1901.

The Principles of Hygiene: A Practical Manual for Students, Physicians, and Health Officers. By D. H. Bergey, A.M., M.D., First Assistant, Laboratory of Hygiene, University of Pennsylvania. Illustrated. Cloth. Pp. 495. Price, $3.00 net. Philadelphia and London: W. B. Saunders & Co. 1901.

Modern Obstetrics: General and Operative. W. A. Newman Dorland, A.M., M.D., Assistant Demonstrator of Obstetrics, University of Pennsylvania. Second Edition, Rewritten and Enlarged. Cloth. Pp. 797. Price, $4.00 net. Philadelphia and London: W. B. Saunders & Co. 1901.

A Text-Book of Embryology. By John C. Heisler, M.D., Professor of Anatomy in the Medico-Chirurgical College, Philadelphia. Second Edition, Thoroughly Revised. Illustrated. Cloth. Pp. 405. Price, $2.50. Philadelphia and London: W. B. Saunders & Co. 1901.

A Text-Book of Bacteriology. By George M. Sternberg, M.D., LL.D., Surgeon-General, U. S. Army. Illustrated by Heliotype and Chromo-lithographic Plates and 200 Engravings. Second Edition, Revised. Cloth. Pp. 707. Price, $5.00. New York: Wm. Wood & Co. 1901.

A Text-Book of Diseases of Women. By Charles B. Penrose, M.D., Ph.D., formerly Professor of Gynecology in the University of Pennsylvania. Fourth Edition, Revised. Cloth. Pp. 539. Price, $3.75 net. Philadelphia and London: W. B. Saunders & Co. 1901.

A Manual of Bacteriology. By Herbert U. Williams, M.D., Professor of Pathology and Bacteriology in the Medical Department of the University of Buffalo. With 89 Illustrations. Cloth. Pp. 290. Price, $1.50 net. Philadelphia: P. Blakiston's Son & Co. 1901.

Libertinism and Marriage. By Dr. Louis Julien (Paris), Surgeon of Saint-Lazare Prison. Translated by R. B. Douglas. Pages v-169. Extra Cloth, $1.00 net, Delivered. Philadelphia: F. A. Davis Company, Publishers. 1901.

Twentieth Annual Report of the State Board of Health of New York. For the Year ending December 31, 1899. Transmitted to the Legislature February 15, 1900. Cloth. Pp. 555. Albany: James B. Lyon. 1901.

Transactions of the Medical Association of the State of Alabama. The State Board of Health, Organized 1847—Meeting of 1901. Selma, April 16-19. Cloth. Pp. 508. Montgomery, Ala.: Brown Printing Co. 1901.

The Pathology and Treatment of Sexual Impotence. By Victor G. Vecki, M.D. Third Edition, Revised and Enlarged. 12mo. Cloth. Pp. 329. Price, $2.00. Philadelphia and London: W. B. Saunders & Co. 1901.

Transactions of the Massachusetts Medico-Legal Society. Volume III—Number 3: 1901. Paper. Pp. 44. Boston: Published by the Society. 1901.

Proceedings of the New York Pathological Society. April, 1901. Paper. Pp. 44. Published by the Society.

Maps Accompanying State Board of Health of New York. Twentieth Annual Report for the Year 1899.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Sept. 26 to Oct. 2, 1901, inclusive:

Joseph L. Bell, contract surgeon, from Fort Morgan, Ala., to his home, Richmond, Ind., for annulment of contract.

Henry D. Belt, contract surgeon, leave of absence granted.

James Carroll, contract surgeon, former orders amended so as to direct him to return from Havana, Cuba, to his proper station in Washington, D. C., not later than Nov. 1, 1901.

Max F. Clausius, contract surgeon, on his arrival at Fort Douglas, Utah, to proceed to Fort Grant, Ariz., for post duty; but this order was revoked, and he was directed to proceed to his home, Burrington, Ill., for annulment of contract.

Marshall M. Cloud, lieutenant and asst.-surgeon, U. S. A., sick leave of absence extended.

Frederick A. Dale, lieutenant and asst.-surgeon, U. S. A., to proceed to San Francisco, Cal., for return transportation to Manila, P. I., in compliance with orders from the Division of the Philippines.

Robert C. F[illegible] from Fort Freemont, S. C., to Augusta, Ga., [illegible]tract.

Samuel A. [illegible]rgeon, from duty at Fort Clark, Tex., to his home, Cleburn, Tex., for annulment of contract.

Eugene H. Hartnet, lieutenant and asst.-surgeon, U. S. A., member of examining boards at Governor's Island, N. Y., Sept. 27 and 28.

T. G. Holmes, contract surgeon, leave of absence granted on the expiration of which he will proceed to San Francisco, Cal., for duty on the transport *Grant*.

Frederick E. Jenkins, contract surgeon, on his arrival at Fort Riley, Kan, with troops, will proceed to Fort Morgan, Ala., for post duty.

William P. Kendall, major and surgeon, U. S. A., member of a board at Buffalo, N. Y., to determine the physical fitness of certain persons for appointment as lieutenants in the Army.

William C. LeCompte, contract surgeon, member of a board at Buffalo, N. Y., to determine the physical fitness of certain persons for appointment as lieutenants in the army.

Frederick H. Morhart, captain and asst.-surgeon, Vols., honorably discharged from the service on account of disability.

Edward L. Munson, captain and asst.-surgeon, U. S. A., member of a board at Buffalo, N. Y., to determine the physical fitness of certain persons for appointment as lieutenants in the Army.

Paul Shillock, major and surgeon, U. S. A., now at San Francisco, Cal., to proceed to Fort Riley, Kan., for duty at that post.

J. Samuel White, contract surgeon, having arrived at Seattle, Wash., will proceed to Fort Assinniboine, Mont., for post duty.

Navy Changes.

Changes in the Medical Corps of the Navy, week ending Oct. 5, 1901:

Surgeon P. Leach, ordered to recruiting duty at Port Royal, S. C.

Surgeon P. Leach, order to recruiting duty at Port Royal, S. C., revoked.

Asst.-Surgeon E. J. Grow, order to proceed home, upon detachment from the *Castine*, modified; ordered to the New York Navy Yard.

Medical Director J. C. Ayers, detached from the Naval Hospital, Chelsea, Mass., October 15, and ordered home and to wait orders.

Medical Director D. Dickinson, detached from duty on medical examining board at Washington, D. C., October 10, and ordered to duty in charge of the Naval Hospital, Chelsea, Mass., October 13.

Surgeon S. H. Griffith, detached from duty at the Pan-American Exposition, Buffalo, N. Y., October 9, and ordered to duty as a member of the medical examining board, Washington, October 10.

Surgeon H. L. Law, retired, ordered to duty at Buffalo, N. Y., in charge of the exhibit of the Bureau of Medicine and Surgery, at the Pan-American Exposition, and as attending medical officer at the naval recruiting rendezvous, October 9.

Asst.-Surgeon D. B. Kerr, detached from the *Culgoa*, when put out of commission, and ordered home and to wait orders.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended Sept. 28, 1901:

SMALLPOX—UNITED STATES.

California: San Francisco, Sept. 14-21, 1 case.
Indiana: Michigan City, Sept. 24-Oct. 1, 4 cases.
Kentucky, Lexington, Sept. 21-28, 1 case.
Massachusetts: Boston, Sept. 21-28, 2 cases, 1 death.
Michigan: Detroit, Sept. 22-29, 1 case.
Nebraska: Omaha, Sept. 14-21, 1 case.
New Jersey: Newark, Sept. 21-28, 6 cases, 5 deaths.
New York: Sept. 21-28, Elmira, 4 cases; New York, 5 cases, 2 deaths.
Pennsylvania: Philadelphia, Sept. 21-28, 29 cases, 3 deaths.
Ohio: Youngstown, Sept. 21-28, 1 case.
Utah: Salt Lake City, Sept. 14-28, 2 cases.
Washington: Tacoma, Sept. 15-22, 1 case.

SMALLPOX—INSULAR.

Philippine Islands: Manila, Aug. 3-10, 1 case.

SMALLPOX—FOREIGN.

Austria: Budapest, Sept. 2-9, 2 cases.
Belgium: Antwerp, Sept. 7-14, 1 case, 1 death.
Brazil: Pernambuco, Aug. 8-15, 56 deaths; Rio de Janeiro, Aug. 4-18, 114 deaths.
Colombia: Panama, Sept. 16-23, 15 cases.
Great Britain: London, Aug. 24-Sept. 7, 166 cases, 15 deaths.
Italy: Naples, Sept. 7-14, 57 cases, 6 deaths.
Russia: Moscow, Sept. 7-14, 2 cases, 1 death.
Spain: Madrid, June 17-July 15, 6 deaths.

PLAGUE—INSULAR.

Philippine Islands: Manila, Aug. 3-10, 6 cases, 3 deaths.

PLAGUE—FOREIGN.

Australia: Brisbane, June 1-30, 3 deaths.
Brazil: Rio de Janeiro, Aug. 4-18, 5 deaths.
China: Canton, Aug. 5, diminishing.
Italy: Naples, Sept. 7-30, 15 cases, 4 deaths.

YELLOW FEVER.

Brazil: Pernambuco, Aug. 8-15, 1 death; Rio de Janeiro, Aug. 4-18, 2 deaths.
Cuba: Havana, Sept. 4-21, 3 cases, 2 deaths; Santiago, Sept. 20, 6 cases, 1 death.
Mexico: Vera Cruz, Sept. 14-21, 5 cases, 2 deaths.

CHOLERA.

Java: Batavia, Aug. 3-17, 5 cases, 3 deaths.

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Original Articles.

REMOVAL OF FOREIGN BODIES FROM THE AIR PASSAGES.*

DE FOREST WILLARD, M.D.
PHILADELPHIA.

The entrance of a foreign body into the larynx is at once the signal for violent expulsive efforts, and in the majority of instances voluntary extrusion is accomplished. Should the object, however, pass the vocal cords, the route to the bifurcation of the trachea is free and unobstructed. At the bifurcation, as the right bronchus is larger and turns at a less abrupt angle to reach the root of the lung, the body is more likely to fall into its lumen, although this result is by no means positive.† If the object is of irregular shape it will not closely fit, and violent efforts at coughing may still loosen it. It may, however, be arrested in its reverse course at the vocal cords. The violence of the efforts, and the interference with the air supply, unfortunately make inspiratory suction as sudden and nearly as intense as expiration, and the offending object may be sucked further into the air passages. The position of final fixation will depend upon these efforts and upon the size and character of the foreign body. The degree of air hunger will depend upon the amount of blockade. Should the entire main bronchus be obstructed, one-half the respiratory tract will be shut off and the dyspnea becomes extreme. Unfortunately, the physician is rarely at hand and immediate professional measures of relief can not be instituted. The majority of these accidents occur in children; consequently, it is well to instruct parents as to the procedures that should be adopted. The rule as ordinarily taught is to the effect that inversion of the child is unsafe, since the object may become blocked within the larynx. As the body has, however, entered by this route, and as it is the one that must be taken in any voluntary expulsion, it is probably the safest domestic practice that can be instituted and may prevent the object from being sucked still lower in the bronchus. An exaggerated prone Trendelenburg position may be maintained until the arrival of the surgeon. Succussion of the individual and vomiting have occasionally dislodged the body. Coughing should be encouraged, but the violence of inspiratory movements should be restricted as far as possible. Brodie reports the case of an adult in whom a half sovereign had reached the bifurcation of the trachea. By inversion of his body in the prone position, and succussion, he was able, after six weeks, to dislodge the offender by coughing, and full recovery ensued.

If the arrest has taken place at the vocal cords, a laryngoscopic examination will probably reveal it, and it may be extracted by forceps or by laryngotomy. In splitting the thyroid cartilage and opening the larynx, care should be taken to keep directly in the median line and to avoid injury of the arytenoid cartilages and muscles. Cocain should be applied to the mucous membrane both before and during the operation, to prevent reflex inhibitory influences upon the heart.

If an *x*-ray apparatus is at hand, and the foreign body is one which is impenetrable to these rays, as coins, nails, etc., the location may sometimes be accurately determined by making shadowgraphs at different angles. Unfortunately, the distress is so urgent and extreme that it is difficult to induce the child to remain quiet long enough to obtain such a shadow unless ether is administered; still, the *x*-ray representation fills a most important place in both acute and chronic blockades of the air passages.

With children, beads, beans, portions of whistles and toys are common intruders.[1] Hard bodies will probably imbed themselves and do not offer much opportunity of being seized by forceps. Vegetable substances are likely to swell from the moisture if they remain long *in situ*, and are, therefore, difficult to dislodge. In one of my fatal cases one-half of the brown shell of a chestnut was drawn far down into the subdivision of a bronchus.

It is important that the history should be reliable, and when a body has been swallowed, close investigation is necessary to determine whether the object has entered the air passages, and secondly, its location. Of course, there are many cases where the symptoms are unmistakable, but when in doubt a most careful diagnosis should be made. A young child not infrequently has a foreign body in its mouth; is seized with violent coughing as the body attempts to enter the larynx, and yet it passes into the stomach. Not a few tracheotomies have been performed in the search for such objects which have later been passed per rectum; consequently, it is unwise to operate in the absence of definite symptoms. Moreover, many a child has been apparently choked with a toy which was supposed to have been swallowed and which has ultimately been found in the corner of the nursery. I have myself witnessed in the practice of one of our most prominent surgeons, a tracheotomy with prolonged search, in which case the article which had supposedly been swallowed was later found in the pocket of the child, and an examination of the lungs (which should have been made previous to the operation, but which was instituted afterwards) developed the fact that the dyspneic symptoms were due to double pneumonia from ordinary causes.

Following impaction, the pain and the absence of respiratory movements will usually be found upon one side of the chest. The absence of vesicular murmur shows the interference to entrance of air, which will be followed later by dulness and signs of consolidation. In partial occlusion the respiration will be stridulous. The interpretation of these signs, taken in connection with other symptoms, must rest with the surgeon, but he must not be deceived by the lull in symptoms that not infrequently follows the initial blockade.

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* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section: Drs. W. J. Mayo, H. O. Walker and A. J. Ochsner.

† Crile: Surgery, Respiratory System, 2d Edition, p. 92.

[1] Poulet: Foreign Bodies, 1880, vol. ii, p. 22.

Tracheotomy.—The opening of the trachea is naturally the most frequent method for reaching an impacted foreign body, an operation that was advocated as early as 1644 by Frederic Manavius. Speedy relief is usually demanded, and ether or chloroform may be employed, or better, local anesthesia in order to retain the use of the extraordinary muscles of respiration. In doing this operation it is better to remove a considerable circle, excising one or two cartilaginous rings, since a simple slit may interfere with the expulsion of the body. If a slit only is made, lateral stitches holding it open are better than a tube. Not infrequently the foreign body is ejected by the primary cough induced by the operation; consequently it should be the duty of an assistant to watch carefully for its appearance. Fortunately, expulsion occurs in about one-half the cases operated upon. This result may be hastened by irritation with a feather. The opening should be as nearly as possible to the top of the sternum, and the forceps must be used with extreme care. The difficulties in locating the body with tracheotomy forceps depend largely upon its character. A bean or kernel is of the same consistency and feeling as the cartilaginous bifurcation of the trachea. If the object is known to be a soft vegetable one, ordinary serrated forceps will not hold. Very short needle-like teeth which will sink into and hold the substance are better. With beads, buttons, tin whistles, etc., successful removal becomes difficult, even when they can be grasped.

One familiar with the use of the cystoscope may, by throwing the head far back and to one side, obtain a view of the foreign body through an inserted tube with electric light. For hard objects a large soft-rubber tube attached to a Bigelow litholapaxy evacuator may be carried down the trachea, and strong suction made upon it, or an aspirating pump or rubber ball may be attached. The evacuator is better, however, lest the body once extracted be again sucked back into position. In case of tacks, nails, etc., a small magnet or an electrical probe may be inserted through the trachea. Blunt curettes, wire hooks, scoops, loops, etc., are occasionally useful. The dangers to the trachea and bronchi by prolonged instrumentation are very great and should never be continued more than a few minutes. The risks of pneumonia are so greatly increased by instrumentation that Weist,[2] in an analysis of 1674 cases, found that the dangers of death from this cause in unsuccessful cases fully counterbalanced the benefits obtained by the number of extractions by tracheotomy. The proportions are one death in three and one-half cases without operation; one in four with tracheotomy. His conclusions in regard to this subject will probably not be materially changed by our present methods, since, although the pneumonia is septic in its origin, yet the sepsis even in former cases was probably not due in large measure simply to the instruments, but to the traumatism to the bronchi. Experiments show that the entering air is septic in the larger bronchi, but aseptic in the smaller divisions.

Failing to secure the intruding object through the tracheal opening, the surgeon is compelled to face two problems, either of which means serious risk to life. Shall he abandon the case to the expulsive efforts of Nature? Shall he rely upon the fact that many such offending bodies have been coughed out even after many years of suffering, and even when the diagnosis of tuberculosis of the lung has seemed positive? In determining the question the surgeon will consider both the character of the foreign body and the amount of interference that it is giving to the air supply. In the case of seeds, etc., voluntary expulsion with subsequent recovery occurs in nearly 74 per cent. of cases.

The other alternative is to reach the bronchus by a direct route. Should the surgeon decide to invade the chest wall in an heroic effort to reach the bronchi, he has before him a series of manipulations, perils, and difficulties that will put to the extreme test his skill, coolness and judgment. Before the introduction of the artificial respiration apparatus, the profound and deadly collapse that immediately followed any invasion of a healthy chest, was sufficient to deter most operators from undertaking such a course. Quenu lost twelve out of fifteen dogs, and while my own experiments have not been quite so serious, they have been very discouraging. In these animals and in rabbits and goats, the communication between the two pleural cavities which exists just above the tendinous center of the diaphragm renders the entrance of air doubly dangerous. Fortunately, we are now better equipped and can confidently rely upon our artificial respiration methods, but without such accessories the conditions are appalling. The exceptional cases in which atelectasis does not occur are so few in number and are so unexplainable that they can not be depended upon. The surgeon must also consider the fact that even when the bronchus is reached by any route, the rigid walls prevent the easy recognition of the foreign body either by sight or touch. Again, as in Curtis' case, even when found in a secondary bronchus, it could not be reached or extracted. In experiments upon dogs I have repeatedly failed to find in the bronchi, pebbles that I had introduced through tracheotomy wounds.

Unfortunately, practice upon the cadaver yields but a slight realization of the conditions found in the living subject. I have at autopsy seen the bronchus of a dog apparently within easy reach, which same bronchus I had seen ten minutes before surrounded by huge pulmonary and azygos veins, with aorta, pneumogastric nerve, root of lung, and every structure in the neighborhood being violently dragged by the wide excursions of the lung in the frightful air hunger of the collapse from acute pneumothorax.

When an opening of any considerable size is made in the pleura and air rushes in, the sudden symptoms of collapse are usually instantaneous. The sudden shifting of the oxygenation of air upon one-half the ordinary circuit; the violent efforts of both inspiration and expiration; the enormous movement of the lung in the effort to produce a vacuum in the chest; the flapping of the pleura and mediastinum; the huge swelling veins filling and emptying and covering the area of operation; the great peril of the patient; the cyanosis and deficient oxygenation are such complications as will greatly delay and often entirely prevent all safe manipulative measures.

I have called attention to these difficulties, not to exaggerate them, nor to deter any surgeon from invading the chest wall, but only to warn him against rash work without proper apparatus, since failure will necessarily bring discredit upon the surgeon and disaster to the individual. A somewhat extended but still incomplete examination of the literature on the subject fails to reveal a recovery after opening of the bronchus. My object is only to urge that unless an artificial respiration apparatus is at hand, and oxygen obtainable, it will be wiser to cease one's operative methods, after short manipulations through a large tracheal opening. With full appliances, however, and a full knowledge of the dangers, one may calmly proceed to enter the chest by a selected route. The conditions are entirely different from those encountered in a diseased lung or pleura, and preliminary injection of air or liquid will avail but little. A small dose of atropia will be helpful.

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[2] Trans. Amer. Surg. Assoc., vol. i, 1883, p. 121.

The oft-tried expedient of plugging the hole in the pleura, or of dragging the lung into the opening, or grasping the base of the lung, is here of no avail, since the search for the bronchus is absolutely prevented by any of these procedures. Air hunger being then the most serious of the complications, some reliable means of artificial respiration must be at hand, or the patient must die in a few moments. Fortunately, the Fell-O'Dwyer[3] apparatus gives us the much-needed help. The apparatus consists of intubation tubes of various sizes attached to a handle, by means of which one of them of proper size can be held permanently within the chink of the glottis, while air is pumped directly into the lungs by bellows worked by hand or foot pressure. Insufflation is accomplished by moderate pressure about fifteen times in the minute, while expiration is accomplished by the resiliency of the chest walls

Matas has improved upon this apparatus by using a double pneumatic pump, by means of which the exact amount of air introduced can be measured. He has also attached a manometer to regulate the degree of pressure, and has added a branch tube through which anesthetization can be kept up. The entering air is also filtered through a cylinder filled with cotton. The pump can also be employed for forcible aspiration of air from the lung. Bloom, Doyen and others have altered these instruments, but the principle of forcibly supplying air is the same.

After tracheotomy the intubation tip can be introduced through the opening so as to fit the trachea, or it can be carried into the glottis and the wound closed.

A pressure equal to 6 mm. mercury has been found sufficient to dilate the lung, while too great pressure, as 33 mm., will interfere with respiration. If too great force is used, emphysema or air vesicle rupture may take place. The artificial movements should correspond as closely as possible to the normal respirations.

By the employment of such an appliance for carrying on respiration, the chest wall may be opened either anteriorly, posteriorly, or at the side. A large opening while much more dangerous as regards atelectasis, yet greatly facilitates the operation. The employment of a tiny electric bulb within the chest also adds greatly to the rapidity and safety of the manipulations.

Anterior Thoracotomy.—Milton, of Cairo,[4] has recommended an operation of entrance which he calls the normal thoracic invasion, and has successfully practiced it upon a living patient. In young children with flexible bones it would be feasible for reaching the bronchus.

With a saw he splits the sternum longitudinally throughout its entire length, and forcibly retracts the halves, thus separating the two pleural layers, and reaching the anterior mediastinum. In attempting this operation it should be remembered that the pleuræ come together not in the median line, but at a line nearly at the left border of the sternum. In this, as in all other routes of entrance to the thorax, it is absolutely essential that an efficient artificial respiration apparatus shall be constantly employed in the prevention of collapse.

Gaston's[5] anterior opening is made as follows: A quadrilateral trap-door flap is made to include the third, fourth, fifth and sixth ribs, and turned back upon its base at the costal cartilages, thus avoiding the internal mammary. The outer end of the square flap is at the mid-axillary line, and the entire chest walls are cut through with knife and saw.

In making an anterior thoracotomy[6] I have tried various forms of incision. The bronchus of the second lobe can be readily reached anteriorly, can be incised and afterwards stitched with a staphylorraphy needle. In another operation upon the right side, with excision of the fifth rib, I was easily able to expose the bronchus or the right upper lobe. The bronchial, pulmonary and a very high azygos vein were pushed aside and the bronchus incised for a third of an inch without wounding any other structure. Whenever the wound in the bronchus was not subsequently stitched, and the chest wall was closed at the end of the operation, each inspiratory act caused an increase of the pneumothorax by entrance of air through this slit, as was evidenced by the bulging of the wound and the increased dyspnea, ending in death.

The same thing occurred in another dog after an excision of the fifth rib, and an opening of the right bronchus. The pneumothorax steadily increased after the closure of the wound, with bulging and escape of air from within outward at each respiration until death occurred. It is easily seen that while air can pass from the interior of the bronchus outwardly, the rounded shape of the tube prevents return from pleural cavity to bronchus. This air from the large bronchi is septic.

Posterior Thoracotomy.—Nesiloff, Bryant and others have proposed to reach the root of the lung posteriorly. Bryant's operation is as follows:[7] In order to give room for the flap, the scapula is carried far outward by raising the arm and carrying the shoulder forward. A square flap three inches in size is made, with its base toward the spinal column, and three ribs, the third, fourth and fifth, are sawed through as far out as their angles, near the posterior border of the axilla. The pleura is then separated from the anterior surface of the ribs by the fingers, and the flap is turned backward upon its base as a hinge, the ribs being separately turned out. The intercostal arteries were ligated before opening the pleura. The presence of the vena azygos and the pulmonary vein will greatly interfere with manipulations, and these, as well as the pneumogastric, must be carefully avoided. If the foreign body can be located, a long incision (long enough to permit removal without laceration) is made in the bronchus. The bronchus is not closed, but packed and drained, as there will be discharge of mucus and inflammatory products. The flap with the ribs should be replaced, but the middle rib may be removed entirely for drainage, if advisable. Any given spinous process indicates the situation of the vertebral extremity of the rib immediately below. Bryant places the division line between the posterior mediastinum proper and the posterior part of the superior mediastinum at the lower portion of the fourth dorsal vertebra. The separation of the pleura is accomplished with the finger, and also by a sawing motion of a strong silk thread carried beneath the rib. The same ligature may be used to draw beneath the rib a chain saw, so as to operate from within outward and avoid premature wounding of the pleura. This opening is probably more favorable for reaching the esophagus than the bronchus. The bronchus in a man will be distant about one and one-half inches from the opening. The operation is one requiring careful manipulation, cool judgment, speedy recognition and skilful treatment of each danger as quickly as it arises.

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[3] Northrop: N. Y. Pres. Hosp. Reports, 1896, p. 132.

[4] The Lancet, London, March 27, 1897.

[5] Trans. Amer. Surg. Assoc., vol. xiv, 1896, p. 465.

[6] Trans. Amer. Surg. Assoc., 1891, p. 345, vol. ix. Trans. Coll. Phys., Phila., 1891. Amer. Jr. Med. Sciences, Dec., 1891. Univ. Med. Mag., Feb., 1892.

[7] Bryant: Posterior Mediastinum. Trans. Amer. Surg. Assoc., vol. xiii, p. 443.

Curtis,[8] in a posterior thoracotomy for an impacted seed vessel of a plant in the right bronchus, tried to extract it with a forceps through the trachea, but failed. At a second operation the boy was placed face downward, with one shoulder raised. A quadrangular flap was raised from the posterior portion of the chest and turned outwardly toward the scapula. Its free edge was near the vertebral spine. The fourth, fifth and sixth ribs were then stripped. The lower layer of the periosteum and intercostal muscles were divided without opening the pleura. The ribs being lifted up, the pleura was carefully detached from the posterior mediastinum and from the posterior chest wall. The bronchus was easily reached, but the azygos vein covering it prevented incision. He encountered the same difficulties that I have always experienced, the violent action of the lung and of the flapping pleura, which interfered most seriously with all manipulations, and he was finally obliged to pack the wound and suspend his efforts. The next day he renewed the attack. The pleura had now become adherent to the lung, and the action was less violent. The bronchus was opened through its posterior wall without hemorrhage, but search with forceps failed to find the body; neither could it be found in the trachea. It was finally discovered by the fingers through the lung substance. The pleura was sewed to the lung and the lung held by a silk stitch. The thermocautery was used directly through the lung substance, but failed to reach the object. The operation was finally suspended on account of the patient's collapse. A drainage tube was inserted with packing, but pneumonia developed on the following day and the patient died in forty-eight hours. At the autopsy the foreign body was found in the secondary bronchus near the end of the drainage tube. The object had been swallowed three days before the first operation. Rushmore[9] in a similar attempt anteriorly was compelled to abandon the operation, and the patient died.

Anyone interested in the subject of intralaryngeal insufflation will be abundantly repaid by perusing Matas' able articles.[10] In these papers he shows that insufflation through a deliberately introduced laryngeal tube was in common practice for the resuscitation of the drowned as far back as the War of the Revolution; that William Hunter used both bellows and intralaryngeal tubes; that Matas' present pump was forestalled by the double pump of Courtois attached to a tracheotomy canula, more than a century ago; that in the earliest years of the last century such a tube was a part of the regular obstetrical outfit for the resuscitation of new-born infants;[11] that Ribemont in 1877 used an intubation canula almost precisely like the one of O'Dwyer; that Truehead of Texas again in 1869 brought out an instrument upon the same plan as the Fell-O'Dwyer instrument.

The Bloom modification of attaching an ordinary rubber syringe bulb to the laryngeal tube is excellent, and the Doyen[12] double bellows and tubes are also good.

The work of Tuffier[13] and Hallion, Quenu and Longuet, Matas, Parham and others, has added greatly to the practical application of artificial forcible insufflation through an intralaryngeal tube. It is now the best known assistant, not only in the performance of lung surgery, but also in the resuscitation of the asphyxiated, the drowned and the new-born. It is also most serviceable in opium poisoning, and in the arrested respiration of anesthetization. (I always keep the Fell-O'Dwyer apparatus alongside the oxygen jar, close outside my clinic door.)

When the foreign body remains permanently fixed in the bronchus, septic pneumonia is a frequent result. In many cases this process leads on to septic abscess, or, if the blockade is complete, gangrene may result. Expulsion of the foreign body and of the purulent surrounding material sometimes occurs, often after months of delay. More frequently, however, death ensues. In the chronic cases the hemorrhage, emaciation and septic conditions often simulate tuberculosis. The proper treatment for all such abscesses or gangrenous areas of lung is a surgical one. The diseased area having been carefully located, a rib should be excised subperiosteally, and contamination of the pleural cavity prevented by suturing of the lung to the chest wall in the form of a parallelogram, before opening. A sharply curved perineal needle with handle is convenient for this purpose. Incision of the abscess and free drainage will offer the best hope for cure.

CONCLUSIONS.

1. Coughing should be encouraged; forcible inspiration restrained.
2. Inversion in the prone position as a domestic practice is advisable.
3. Laryngoscopy is helpful if the body is lodged at the vocal cords. It may be extracted by forceps or by laryngotomy.
4. If time permits, the *x*-ray may be brought into serviceable use for diagnosis.
5. Careful diagnostic investigation is important to determine the actual presence of an impacted body, and its location.
6. Tracheotomy under local anesthesia should be the rule if the object is lodged at the bifurcation or in the bronchi. Tracheoscopy, suction and forceps' manipulation must be cautiously employed. Prolonged instrumentation adds greatly to the danger of pneumonia.
7. If extraction is not secured through the tracheotomy wound the chest wall should not be invaded unless an artificial respiratory apparatus like the Fell-O'Dwyer is at hand, and oxygen available. With the assistance of these appliances, however, the bronchus may be reached, anteriorly or posteriorly, since, by their use, rhythmical movements can be maintained.
8. Resultant abscess of the lung should be treated by incision and drainage.

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[8] Curtis: Annals of Surgery, 1898, vol. xxviii, p. 605.

[9] Rushmore: N. Y. Med. Jour., 1891, liv, 85.

[10] Trans. Louisiana State Med. Soc., 1898. Trans. South. Surg. and Gynaec. Assoc., Nov., 1899. Annals of Surgery, 1899, p. 409.

[11] Depaul: Jour. de Chirurgie, 1845.

[12] Doyen: Technique Chirurgicale, pp. 129-133. Revue de Therapeut. Med.-Chirurg., Jan. 15, '98, vol. xlv.

[13] Tuffier: Société de Biologie, Nov. 21, 1896. Bull. et Mem. Soc. Chirurgie, Feb., 1897.

THE TREATMENT OF EMPYEMA.*

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The average treatment of empyema is still far from satisfactory and decidedly behind the present state of surgical science. Tardy diagnosis, inefficient drainage and slovenly after-treatment are the most frequent causes of failure, retarded convalescence and great deformity, results which, though much less frequent than formerly, are not seldom encountered at this late day. The operative treatment of the disease is too often undertaken by those unfamiliar with modern surgical methods. It is high time that a greater respect for the chest should be impressed upon practitioners who appear to regard the treatment of pleural suppurations lightly, and as a fair field for any one able to insert a tube and diligently use a syringe.

The rational treatment of suppurating pleurisies is simple and well known to competent surgeons. Early diagnosis, prompt and efficient drainage, and aseptic after-treatment summarize the whole matter. It is only in the details of technique that discussion is likely to arise and further improvement in methods is to be sought.

EARLY DIAGNOSIS.

Prompt recognition and adequate drainage of the purulent effusion minimizes ruptures into bronchi, systemic infection, loss of lung expansion and pleural thickening. The degree to which the collapsed lung recovers itself depends largely upon the density of the visceral pleura and upon the length of time during which the lung has been compressed. Pulmonic sclerosis and pleural thickening are the chief causes of difficulty in obliterating these cavities. Hence, while there are other causes of tardy or imperfect lung expansion, late diagnosis is one of the most serious and frequent, and one which very moderate skill and diligence ought to almost wholly remove. Perhaps the most excusable delay occurs in certain empyemas developing with or closely following pneumonia, but the abnormal course of events should sufficiently arouse the attendant's suspicions to lead to the use of the exploring needle before many days have passed, even in the most deceptive cases. In any case of thoracic dulness open to doubt, so safe, certain and easy a means of diagnosis as aseptic needling should not long be delayed.

Having early recognized the presence of a suppurating pleurisy, by the needle, a bacterial diagnosis of the variety of the infection is exceedingly desirable. However, pleural suppurations are in practice so generally due to mixed or virulent infections, that serious errors in treatment are not likely to follow its omission in the hands of experienced clinicians to whom the physical properties of the exudate are ordinarily sufficiently characteristic for practical purposes.

EFFICIENT DRAINAGE.

A pleural suppuration being recognized, all the world has agreed that it should be removed; but how and where, have been much discussed. Before the era of aseptic surgery and bacteriology a great variety of methods were alternately used, abandoned and resumed. Puncture with the trochar, aspiration, intercostal incision, puncture and injection of antiseptics, continuous irrigation, etc., were alternately lauded and rejected. Ingenious tubes, complicated instruments and theoretical appliances were proposed. Indeed, the practical surgeon must still be astounded at the antiquated assertions and loose advice still prevalent in many textbooks. At present we know there are empyemas and empyemas. Certain benign infections are easily cured by means wholly inefficient in others. In our present light the indications for rational treatment appear to be clear and fairly definitely established. A very few yield to paracentesis, and a certain other few are, perhaps, best treated expectantly so far as operation is concerned. It is also well known that certain benign effusions may be successfully drained by simple intercostal incision without rib resection, especially in children, and yet this operation is rarely advisable. Thus, the normal procedure for acute empyema is thoracotomy with resection of a rib. This should be the rule, because it alone is adequate to the best treatment of the vast majority of cases, and because skilfully done it is scarcely more difficult or dangerous *per se* than the less efficient drainage of simple intercostal incision.

The drainage opening should be large enough to allow of the removal of all clots and débris, to admit of careful examination of the cavity, even in some cases to allow of inspection by reflected light, and to remain thoroughly open until the cavity under ordinary circumstances may be expected to close. To these ends it is well to resect 6 centimeters of a rib, which admits of the introduction of three fingers. Personally, in certain cases where the conditions found indicate that a very prolonged drainage will be necessary, I occasionally resect two ribs, simply with the idea of establishing a lasting free drainage and keeping the cavity under inspection during its closure. This is, of course, unnecessary in simple acute cases. In my experience, especially in the past, the drainage opening is made too small ten times where it is once made unnecessarily large. The difference in traumatism between making a small opening and one admitting three fingers and giving full command of the cavity is little, but the difference in efficiency is great. I would make three exceptions to this rule of rib resection as the normal procedure in acute empyemas:

1. In pure pneumococcic pleurisies, thoracentesis may be tried, and it not rarely succeeds. This variety is more frequent in childhood—hence, the frequently reported cases by aspiration and small drainage in children. This fact, together with the greater intercostal space in these subjects, has led to a disposition to view the indications for treatment of empyema in children as differing from that of adults, a contention without much foundation, and unless it be in very young infants, rib resection should be the rule. I have met with only two cases of pure pneumococcic pleurisy in adults. In one, a young man, a single aspiration of three pints of a light white pus was followed by prompt and complete cure. When the history of the case and the appearance of the exudate point to a probable pure pneumococcic infection, drainage should be delayed, and if bacterial examination confirms the suspicion, even a second, possibly a third evacuation by the aspirator may be tried before opening the chest.

2. There are certain pure tuberculous pleurisies in which drainage should be delayed until the advent of mixed infection. Tuberculous pleurisies are for the most part serous, until mixed infection occurs, when, as a rule, they are more or less benefited by free drainage. However, there are several varieties of tubercu-

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lous pleurisies as well as suppurating pleurisies in tuberculous patients, and it is a matter of good judgment rather than of set rules when to operate and when not. Briefly stated, I think the rule should be when the exudate withdrawn by the exploring needle is apparently sterile, or when there is little rise of temperature or evidence of sepsis, it should be left alone, or at most reduced somewhat from time to time by aspiration in case subjective symptoms arise, or the accumulation is increasing. This is especially the case in hemorrhagic tubercular effusions.

3. In large and double effusions, gradual evacuation by paracentesis is advisable as a preliminary measure, the rib resection being delayed a few hours. Or in double empyemas the rib resection may be made on one side and the siphon drainage of Bülau may be simultaneously instituted on the other.

ANESTHESIA.

In most cases the brief and light chloroform narcosis required for a rib resection is well borne, but if the general or cardiac conditions seem to contra-indicate chloroform, the operation, if dexterously performed, may be made with but little discomfort under local anesthesia (Schleich). Ether should not be used.

In operating under general anesthesia, the position on the table is of importance. In large effusions, and in cases which have already ruptured into a bronchus, the patient ought not to be placed upon the sound side; hence, a high table with the involved side drawn well over the edge, aids greatly in making a well-placed drainage.

As to the technique of the very simple operation of rib resection, there is but one point that occurs to me worth mentioning. Good bone forceps are undoubtedly the most handy instruments for section of the bone, but they sometimes disagreeably crush and fissure the rib. A much neater and smoother section is made by a Gigli's wire saw. Possibly the occasional neuralgias and some other rare sequelæ of rib resection might be avoided by this certainly more elegant method of resection.

LOCATION OF THE DRAINAGE.

In draining the pleural cavity the opening should be placed at the lower and posterior part of the collection, or rather at the point which is to become such as the cavity shrinks. Leaving out of consideration interlobular and supra-diaphragmatic collections, intra-pleural effusions vary considerably in their location in different cases, hence to place the drainage opening at any set place on the chest is manifestly absurd. It is doubtless a fact that purulent effusions most frequently occupy the lower and posterior portion of the pleural cavity; hence, in the majority of cases of empyema, the eighth rib, well back, just outside the angle of the scapula, is best chosen.

In the mid-axillary line and anterior to it the muscular covering is less thick than upon the latero-posterior aspect of the chest, and this naturally inclines the operator to choose a location which is often ill-placed. The usual dorsal position of the patient on the operating table further increases the difficulty of operating posterior to the mid-axillary line. An opening in this plane is quite sufficient for certain empyemas, but if the case is a bad one, i. e., a virulent infection, and the cavity large, I have often observed that the residual cavity, after a few days or weeks of drainage, is most often found to be upward and backward from openings placed low and forward. Hence, in most cases, a drainage placed moderately low and well posteriorly upon the unevacuated cavity proves most satisfactory during the latter course of the treatment. Indeed, in certain cases, the rib is best resected as far back as the angle. In at least three cases I have observed moderate-sized cavities located upwards and backwards under the scapula which could only be drained by such posterior-lateral incisions. In many cases drained by others or by myself, I have found after a short time that the opening came to be situated below and in front of the cavity, leading to the necessity of reopening further backward and upward. The rule ought to be to place the opening moderately low and well posteriorly upon the cavity. If it be too low, the diaphragm in certain cases soon rises over it and the drainage is soon imperfect and troublesome. I have never seen it placed too far backwards for the best results, but many times too far forwards. However, as a high posterior rib resection is a rather more formidable operation in certain cases, it is well to resect the eighth rib in the mid-axillary line as a primary measure, and some weeks later, if necessary, make a second higher and more posterior resection if required.

OF IRRIGATIONS.

After resecting the rib, the first opening through the pleura should be small so that a large part of the effusion may drain away slowly. When this has taken place the pleural incision is increased correspondingly to the piece of rib removed. Through this copious opening the cavity may be thoroughly cleansed by wiping out with bits of gauze on a long forceps. In case the condition of the patient demands it, this may be deferred to a subsequent time. Immediate irrigation of the cavity is often objectionable and always less efficacious than wiping out with gauze. In my opinion lavage of these cavities has a very limited field of usefulness. Two things are quite clear: 1, with the chest opened as freely as here indicated, frequent irrigations are not necessary; 2, the injection of empyemic cavities through small openings is decidedly dangerous. Sudden deaths, syncope, embolism, paralysis, various nervous phenomena, etc., which have been long observed and much discussed, are undoubtedly the most striking, but not the most frequent accidents of irrigation. Rises of temperature and various septic phenomena and complications very frequently follow too diligent lavage of these cavities. The smaller the opening and the more forcible the injection, the greater the liability to these various accidents. I have never seen any serious accident follow the gentle lavage of freely opened cavities, but I have come to believe that they do better with a minimum of irrigating. The idea of stamping out infection by the use of antiseptic washes is no longer rational. A few days after the free opening of a cavity peroxid may occasionally be poured over its walls or applied with a swab of cotton, or it may be washed out with warm bland solution if desired. The indications usually given for lavage are: 1, abundant purulent secretion; 2, fetid secretion; 3, if the fever persists or reappears after a period of apyrexia. It may surely be debated whether lavage avails anything against either of these indications. I am certain that it is a frequent cause of the latter condition, i. e., persistence or reappearance of the fever, and I have repeatedly known the temperature to subside when lavage was stopped. When a cavity can not be kept clean without much lavage, it usually needs to be reopened more freely. It is better to devote greater care to external cleansing of the wound and skin, and to the occlusion dressing and less to the diligent squirting of quarts of fluid into these cavities. When the secretions increase or become foul, the cavity ceases to shrink, and the opening has become small, free reopening is usually followed by general and local improvement, whereas the most diligent syringing shows little if any beneficial results.

DRAINAGE TUBES.

With a large opening of the chest the chief object of the drain is to keep the wound from closing. When the bottom has been taken out of the reservoir, draining away of the secretion can scarcely be prevented. With a small hole entering the cavity at some point on its external wall, often with clots and débris retained, it can scarcely be kept clean with an irritating drainage tube. For the purpose of keeping the wound open and its lips in a good healthy condition, copious gauze drainage is preferable in most cases, at least in the early after-treatment. When the amount of secretion is great, rubber tubes surrounded by gauze may be preferable. There are many objections to exclusively tube drainage in these cases: 1. The wound is encouraged to close down rapidly and the command over the cavity by direct inspection is lost. 2. The pressure of the tube exercises a bad influence on the soft tissues. The tract occupied by a tube is usually in an unhealthy condition, in marked contrast to that of a large wound held open by sterile and iodoform gauze. There are doubtless stages and conditions in the course of the treatment of empyemas in which tubes are very useful, but I find myself using them less and less. When desirable, two large soft-rubber tubes placed side by side may be used. They should be of the size of the thumb, short, and not press upon the pleura. Great care is necessary in their daily sterilization, and some contrivance to secure against their loss in the chest must be instituted. When small openings were in vogue, nearly half the cases coming under my observation were found to have lost tubes in the chest. The many ingeniously devised drainage tubes are absolutely superfluous, to say the least. Valvular drainage tubes, as proposed by Williams and others, with the idea of expanding the lung during inspiration, are certainly not necessary and of doubtful efficiency. In empyema when the chest is opened the collapsed organ is expanded by air from the sound lung during expiration and in coughing. And this force is apparently much more effective than inspiratory efforts with the chest closed by a valve. If tubes are to be used for chest drainage none are better than those manufactured on the spot from sterile pure soft-rubber tubing, but personally I prefer gauze drainage for the most part and use tube drainage only in stages and cases where it seems more expedient. Many cases may be drained all through by gauze. More frequently after a time, when the cavity has become small, tubes are substituted with advantage. At times it is necessary to drain a considerable cavity through a small opening on account of the condition of the patient, in which case tubes are quite indispensable, but as a rule such a cavity needs a freer opening.

DRESSINGS AND AFTER-CARE.

The dressing of empyema cases is often very careless. These patients being ambulant most of the time, are often allowed to shift for themselves, and the after-treatment is anything but aseptic. Strictly speaking, a careful aseptic occlusion dressing ought to be maintained throughout the treatment from the first opening to the closure of the cavity. How rarely this is achieved we all know. While the dangers of seriously reinfecting an old granulating cavity are not great, such accidents may often be observed in the most chronic cases and doubtless sometimes occur in the early stages of acute cases, when a comparatively benign infection is rendered more virulent by the entrance of infection from without. Patients and attendants should be more impressed with the necessity for a rigid aseptic after-treatment of these cases. While the discharge is free the dressings should be changed as often as they become saturated, and during the whole after-treatment at least once a day.

Besides the general attention directed to the constitution and the local care of the wound, a third matter ought to receive constant consideration, viz., the progress of the expansion of the collapsed lung. During the early days of the after-treatment, cough tends to this end; hence, it should not be too far subdued by narcotics. If, after the patient has had time to recuperate, it is found that the lung is slow in expanding, means should be instituted to assist it. Until the cavity has nearly closed, forced expiration is the most efficient and practical means at our disposal, and the patient should be instructed in methodical forced expiratory movements with closed glottis. The suggestion of Koenig to require such patients to blow up air pillows several times daily is practical.

THE PROGNOSIS.

The prognosis as regards life naturally depends upon the nature and extent of the infection, and the resistance of the individual. As regards closure of the cavity, it may be said, I think, that acute empyemas, promptly recognized, freely and adequately drained, and aseptically treated, as a rule close in from three to twelve weeks. As the treatment of empyema becomes more rational, thorough and scientific, incurable fistulæ and cavities become more rare; in fact, the exception.

CHRONIC EMPYEMA.

However, some cases for various reasons become chronic, and the cavities are closed only with difficulty and after months of invalidism, and the performance of more or less extensive plastic operations. In a few, owing to feeble general health or tuberculosis, the final closure of a small sinus may be indefinitely postponed. Plastic operations should not be undertaken until the cavity has been reduced as far as possible by free drainage, general improvement of health and respiratory gymnastics. It is usually several months from the time of the primary opening before shrinkage of the cavity comes to an absolute standstill, when, if the general state warrants, thoracoplasty may be undertaken. When after long drainage the lung has expanded to the fullest extent possible, the mediastinum has been displaced, the diaphragm has risen, and the chest wall has fallen in until the ribs are in contact and a cavity or sinus still remains, it is evident that some other principle than drainage must be called into action if the cavity is to be finally closed. The idea of the surgeons who first attempted to close these chronic cavities seems to have been that closure is chiefly prevented by the rigidity of the ribs; hence, Estlander in 1877 proposed to mobilize the thoracic wall by resecting that portion of the ribs covering the cavity. In practice the cause of failure of most of these cavities to close is to be found rather in the pleura than in the ribs. The walls of these persistent cavities and fistulæ become indolent and quite analogous to the edges of certain old indolent ulcers, and removal of the superimposed ribs alone rarely proves entirely successful in their complete closure. Hence, this type of thoracoplasty has been superseded by the Schede type of operation, in which the whole chest wall, save the skin, is removed over the cavity. Of late years cases requiring extensive plastic operations are much less frequent than ten or fifteen years ago, but in five cases during the past six years I have found it necessary to remove more or less extensive portions of the chest wall, and secured complete and prompt closure in such instance, whereas ten or fifteen years ago a much larger number of operations of the Estlander type were observed, in the majority of which sinuses remained as long as the cases were followed. Thus, with prompt and efficient treatment of acute empyemas, chronic cavities and fistulæ are rare, and these may with few exceptions be closed fairly promptly by thoracoplasty. When the general state is very feeble, when amyloid disease is advanced, when the cavity is enormous, failure is probable, but there are few absolute contra-indications to a well-timed attempt to close these chronic cavities. Tuberculosis is unfavorable, but by no means an absolute contra-indication.

DISCUSSION ON PAPERS OF DRS. WILLARD AND DUNN.

Dr. A. C. Bernays, St. Louis—Pneumotomy and pneumectomy are the operations which deal with tuberculosis—first and last and all the time with tuberculosis, excepting, perhaps, a few cases where a surgeon would be called early enough to render aid in a traumatism from a gunshot wound or a stab in the chest. We are gradually encroaching on the domain of the medical men so much that soon our fellows may not have their lungs left. I really believe the time is at hand when we are going to attack the ravages of tuberculosis in the lungs with our surgical technic, and I believe we are going to do it successfully in many cases. In order not to discourage our efforts, we should carefully select suitable cases. It is a fact that pure infection by tubercle can recover spontaneously or by means of dietetic and climatic treatment. We all know that to be a fact, because we have all examined the sputa of tubercular patients and have seen them recover from dietetic and climatic treatment. In those cases prognosis is favorable as long as there is no mixed infection. As long as the patient has only the growth of tubercular bacilli in his lungs he may recover spontaneously, but in most cases there will soon be a mixed infection; that is what kills and that is what I think we can attack surgically. When there has been a secondary infection of the tuberculous patient by staphylococcus, streptococcus, colon bacillus, and other pathogenic microbes, or some of the saprophytic microbes, then our treatment must aim at their exclusion. Cavities in the lung are the points of attack. In considering their treatment, the question is simply this: Is the danger of the operation less than the expected benefit? Then the procedure is justified even if it is not a radical treatment. We must select cases that are not beyond the stage where recuperation is possible, just as we do in carcinoma. Cases in which a cavity in the lungs is the most prominent danger are rare, but if we can only bring one in a hundred of these unfortunates back to health, the operation of pneumotomy must appear as a justifiable operation. Just before I came here I had the superintendent of a public hospital send for me to see ten cases of death from consumption and in those ten cases I, with the aid of my assistants, went to the dead house and removed all of the soft parts over the top of the lungs on both sides, removing the whole clavicle, the first, second, and third ribs and then examined the tops of both lungs; the most interesting thing I found was that I could peel out with an elevator and with my fingers, the apices of the lung on both sides in eight out of ten cases without causing the pneumothorax. It was possible, by a blunt instrument, and with the fingers to peel out the upper part of the lung, in eight out of ten cases so that the lower part of the pleural cavity was not opened and there was no chance of producing a pneumothorax. While I was doing that postmortem work, of course I had in view an operation which I could do upon a living patient and I believe that the best operation to be done in a case of that kind will be the following: Make an incision, beginning at the margin of the sternum and running through the pectoralis major muscle 5½ inches laterally in a straight line down to the second rib. Some French surgeons have advised making an incision over the first rib, but I think that is a mistake. The incision over the second rib gives much more room and is easier done. By means of the finger or a blunt instrument the pectoralis major muscle and soft parts are scraped off the ribs upwards and downwards. Then, by putting in a broad retractor, such as we use in the abdominal cavity in each side, the edges can be spread out and the second rib exposed for 5 inches. Another retractor placed into the lateral edge of the wound, will rest upon the axillary vessels and brachial plexus, but it will completely protect them so that, with the greatest ease, the second rib can be resected. I note that whenever I made a cut through the cartilage, the rib would stand out and then it is only necessary to use the wire saw or bone forceps, or even only to pull upon the medial end until it breaks off near its angle. All you have to do is to take hold of the second rib and break it off; it will break at its weakest point near the axillary line. It is not necessary to use bone forceps, but the second rib is taken hold of firmly and broken off, leaving not a ragged, but always a transverse break. You will have before you the white, almost bloodless, cicatricial-looking fibrous layer of tissue, the two layers of pleura having adhered, and you will find it not only difficult but requiring force with your fingers to loosen the cupola—the apex of the lung—out of its adhesions. Having loosened it clear around behind, on the sides and in front, then the finger will easily detect the fluctuation of the cavity; this cavity I would not open with the Pacquelin cautery, but with a knife. There is little danger of hemorrhage in the peripheral part of the lung. The top part particularly is not supplied with large arteries. The blood in them is under a low pressure and you can push your knife, or if you please, if you are in the tentative stage of surgery, you can push a thick trocar in there until you find the pus cavity. Having found the pus cavity, it should be opened by the method of Mr. Hilton. You remember he gave a method for the general practitioner to open abscesses, a method which avoids hemorrhage. After making the cut, press the dressing forceps into the cut, and enlarge the opening by separating the handles of the dressing forceps. In that way the abscess cavity can be widely opened and can be treated in any way that the operator may choose. In these cases that I examined very carefully I found that on the inside of the cavity you could see large blood vessels covered merely by a little pyogenic membrane, ready to burst. I found this in all the cavities I opened. Whether it would be well to tie those vessels with catgut or silk, I do not know. In this department of surgery we depend largely upon our theoretical studies. It would be a perfectly safe operation if in such a case as that you did not produce a pneumothorax but succeeded in getting into a cavity, to treat that part of the human body exactly as you would treat a case of pyonephrosis, appendiceal abscess, or abscess of the liver. The fever is caused by the pus, not by the tubercle bacilli, but by the secondary infection with pyogenic bacteria. You can drain the cavities and the patient's temperature will become normal rapidly. If he has a cavity also on the other side, it will not become normal until you open the other side. Dr. Willard covered the ground of treatment of foreign bodies in the air passages completely.

The first and important statement Dr. Dunn made was that the treatment of empyema depends upon microscopic findings in the fluid that have been brought out by the exploring needle. The condition demands that a microscopic examination must be made and the treatment must be governed by the findings of what is withdrawn with the exploring needle. One point that I never heard before was the use of the wire saw for the purpose of cutting out the ribs. I shall undoubtedly adopt that plan, for that will prevent ragged and jagged edges. In regard to irrigation, I find myself absolutely in agreement and will only mention it in order to emphasize my position. I used to be a great irrigator, but I have absolutely abandoned irrigation, both in empyema cases and abscess of the liver, or in appendiceal or pelvic abscesses of any kind. It is a principle of surgery that where we have complete and free drainage we don't need irrigation. After drainage of an abscess, if fever arises, you can not cure that fever permanently by irrigation. What is indicated is to make the hole larger or make another hole in another place.

Dr. J. H. Barbat, San Francisco—I have been experimenting on dogs during the past year in the endeavor to solve some of the problems in thoracic surgery. I was unable to obtain any of the insufflation apparatus, and so had one constructed, which worked very successfully. It consists of a bellows with a spring, which can be adjusted so as to regulate the amount of air in each insufflation. The air is passed through a wash bottle containing hot water, so as to remove all dust and also warm it, thereby lessening the possibility of irritating the bronchial mucous membrane. A second bottle is provided with a two-way cock, which allows us to pass the air from the bellows either direct to the lungs, or to pass it through chloroform or ether, thus regulating the amount of anesthetic perfectly. I found in my experiments that it was easier in the dog to use a tracheotomy tube than an O'Dwyer tube. By anesthetizing the dog first, the tracheotomy tube was easily introduced, and then the insufflation and anesthetic could be kept up during the operation with comparative ease. To enter the chest cavity I make an osteoplastic flap by cutting through the requisite number of ribs near their attachment to the costal cartilages with a modified gardener's pruning shear, the cutting blade of which is thin and sharp, thus avoiding crushing the ribs. The next step consists in passing a full curved needle armed with heavy silk through the skin and around the rib, being careful to avoid including the intercostal vessels and nerve, at a point three or four inches back of the first cut. A Gigli-Haertel saw is then pulled through by means of the silk, and with two or three strokes of the saw the rib is weakened. All the ribs previously cut being treated in the same way, it is easy to turn back a large flap, without having seriously interfered with the circulation, which allows us to work with freedom on the contents of the chest cavity. In resecting the lung the electro-hemostatic forceps of Skene may be used instead of the angiotribe, the only disadvantage being that it is necessary to carry the electrical apparatus with you while the angiotribe is complete in itself. In resecting a rib for empyema, time is an important factor, and I have found that the operation may be expedited by using Doyen's periosteotome, which consists of a piece of narrow half-round steel, one end of which is bent in the shape of the letter C and set at right angles to the shank. After cutting through the soft parts and periosteum with one stroke of the knife, the free end of the periosteotome is passed under the periosteum and worked up over the top of the rib, then down behind, avoiding the vessels and nerve, then out in front of the lower border of the rib. The shape of the instrument is such that when it is in position it fits the rib closely and all that is necessary to do is to move it back and forth a few times to loosen the periosteum perfectly, then with the sharp cutting shears the rib is divided, and the whole operation completed in from three to five minutes.

Dr. W. Jepson, Sioux City—In connection with the subject presented by Dr. Willard, I believe that there are few subjects in the whole domain of surgery where it is so essential that a clear conception should exist regarding what to do and how to do it, as when treating foreign bodies in the air passages. The statistics as collected by Gross, Weist and others, indicate that about 24 per cent. die when not operated upon. This is certainly a large mortality and must place this condition among the graver accidents; however, the saddest fact revealed by statistics covering a large number of cases is that more die when operated on than when not. Thus, of 1000 cases collected by Weist in 1878 or 1880, it is shown that the mortality was increased 4 per cent. by the employment of operative measures for the removal of the foreign body. Notwithstanding the sad results of operative interference in these cases, I say that Gross uttered an axiom when he, some forty-five years ago, stated that when a foreign body existed in the air passages, the trachea should be opened to facilitate its removal. This opinion was based upon his own personal experience, which showed that 17 per cent. more recovered when operated upon than when left alone. From a personal experience of 16 cases, 15 of which were operated upon with recovery in each instance, I advocate that, with few exceptions, where a foreign body has gained access to the trachea or bronchi, the trachea should be opened as soon as possible to facilitate its removal. It was said that the symptoms were often indefinite and vague. How true this is we quickly learn after even a limited experience with these cases; the phenomena occasioned by their presence may simulate those occasioned by any of the various affections of the respiratory tract, and it therefore behooves us not to overlook their presence. I seriously doubt if the employment of emetics, sternutaments, or inverting the patient and slapping upon the back, or other measures calculated to increase the expiratory force with a view of dislodging and expelling the body, are proper measures to employ. I recognize that now and then it may possibly be fruitful of the object aimed at, yet how often does it not fail and possibly with dire results. The upper third of the larynx is supplied by the superior laryngeal nerve, irritation of which may, through its relationship with vagus, lead to cardiac and respiratory inhibition, which may be most serious. We see this fact unconsciously recognized on the part of parents of children having seeds of corn, etc., in their air passages, by maintaining them in an upright posture so that the gravity of the foreign body keeps it out of the larynx, thus avoiding those violent attacks of coughing and choking.

The question of greatest importance pertains to the procedure of removing the foreign body after the trachea is opened. Foreign bodies in the air passages may be divided into two classes: 1, those which are movable within the lumen of the trachea or bronchi, bodies which are generally possessed of a more or less smooth surface, as seeds of corn, beans, coffee beans, etc.; 2, those which have become fixed in some part of the air passages, bodies which are generally irregular in shape, as tacks, pins, sand-burs, etc. Of course, a smooth body may become impacted in the larynx or either of the bronchi. After opening the trachea we readily recognize by the character of the breathing as to whether the body is distal or proximal, and are thus guided. If in the larynx, its removal can generally readily be accomplished by a suitable pair of forceps. If the body is located in the lower part of the trachea or a bronchus, especially if the same be hard and smooth as in the instance of many seeds, I doubt if we are warranted in making any attempt to grasp such a body with any forceps which we now possess. We would be much more likely to force it on down into the constantly diminishing lumen of a bronchi and thus impact it, making its subsequent removal very difficult if not impossible. The resistance offered by the trachea or bronchus to smooth bodies is not great until they are impacted, but it is necessary to grasp these bodies. All that it is necessary to do is to loosen them if impacted, when the expiratory current of air will carry them to the tracheal opening, and, if the trachea be slightly angulated by means of a pair of catch forceps or a loop of thread in each edge of the tracheal wound, the body will be ejected, or brought to the wound where it may be readily grasped. To loosen such bodies when fixed or impacted, no more efficient means can be employed, with possibly few exceptions, than that simple expedient of taking two or three strands of fine steel wire and twisting them together, leaving loops which may be passed beyond the object to loosen it on the withdrawal of the loops. A wire with a hook on its end and a half-circle higher up to keep the hook in the lumen of the passage, may at times be used to much advantage. No doubt the coughing excited by the passing of the wire loops is a potent factor in many instances in loosening the foreign body. I concur in the view expressed by Dr. Willard that the simple opening of the trachea can not add to the risks of the patient; therefore, the large mortality in these cases, as shown by statistics quoted, must be due to other causes; probably because operative procedures were instituted too late or unwarranted instrumentation was employed and injury resulted.

Dr. Jacob Frank, Chicago—I have had considerable experience with two unpublished cases of lung surgery, and I have found from these and from experiments on dogs, that lung surgery is not so easy as most speakers would lead us to believe, with the exception of Dr. Willard. The first case was that of an abscess in the upper part of the right lung. I should say that it was an abscess of the lung, because the patient under anesthesia had frothy blood coming from his mouth. That is one of the signs and also one of the dangers in operations on the lung which has not been mentioned here, that is, drowning of the patient in his own blood. I worked my way down to it by resecting the clavicle and part of the first rib before coming to the abscess. This patient made a recovery. We introduced a syringe with a catheter, made suction, and the patient recovered. The second case that I had was that of a little boy who periodically would vomit from a quarter to a half a glass of pus. It could be distinctly determined on percussion when the abscess cavity was full and when it was empty. I thought it best to operate when the abscess cavity was full, but unfortunately when he was taking the anesthesia he vomited the pus. I resected the ribs and poked around with a needle twenty or thirty times until the blood came out of the boy's mouth and he was almost suffocated. I had the cavity soon cleared of the blood, and then worked my way with an artery forceps to find the cavity, and I failed. I am sure that I made enough laceration of the lung to find it, and can not say why I failed. The boy died. In lung surgery we stand to-day where surgery did twenty years ago in tuberculosis of the joints, first the resections and then afterwards getting to the curettement. I can not see the benefit of resection or excising any portion of a tubercular lung, unless we are sure there are not any tubercles a quarter or an eighth of an inch just beyond the border of the removed part, and I do not think that surgery of the lungs will ever become prominent—that is, excision for tuberculosis—unless we have some means to determine that there are no tubercles in any other part of the lungs. There is a difference whether we have a deep abscess of the lung to operate on without any adhesions of the pleura and the chest walls, or whether it is superficial. Merely an abscess, where there are adhesions already, is not more difficult to open than any other abscess.

Dr. Lemoyne Wills, Los Angeles—There is much opposition to anything in the way of draining superficial cavities, or any operating on the chest until it is too late to do good. It is for the profession to overcome that opposition and not to allow their patients to go on in a septic, dying condition and then send them away to Arizona and New Mexico and Southern California, allowing the responsibility to be shifted to other men's shoulders and obliging the latter to sign the death certificate. That is the condition in which we get them. If you would diagnose your cases properly, treat them properly, as in operations on the brain and abdominal cavity, there would be more cases cured and fewer suffering consumptives in the last stages sent West to die. I am agreed with Dr. Frank that this is a matter of diagnosis. It is a matter of great care in the selection of your cases, but if you have a case almost moribund, with tubercle bacilli in sputum and a single large cavity in the posterior lower lobe, and can drain it, and if the man gets well and goes back to active life at his trade and puts on 75 pounds of flesh, that is certainly hopeful for the future of such operative treatment. If your patient is willing to submit to operation, knowing the dangers, the surgeon should be willing to take the risk even if as low a percentage as one in a hundred is cured.

Dr. C. H. Norred, Minneapolis—I simply want to relate a case, not operated upon, that made a brilliant recovery. In 1869 a child between 2 and 3 years of age, in running, drew a peanut kernel into the bifurcation. At that time we were not operating upon the lungs, and I treated the case expectantly. The patient, however, developed a typhoid pneumonia, and I called to my assistance Drs. Burrough and Henry, of Springfield, Ill. They assured me that my patient was beyond help. I noticed that in the paroxysms of coughing the child would get the peanut kernel up just so far and a spasmodic contraction would take place, everything would stop and cease and a desperate strangulation would result. I suggested that we relax the patient most completely, then give the child an emetic. The child was given morphia; we provoked vomiting and secured in a bowl the peanut. We finally succeeded in handling the complications and the child recovered.

Dr. W. W. Keen, Philadelphia—Some time since I had occasion to attempt to reach a cavity in the lung that was filled with pus, and I made the incision at the point that was indicated by my medical colleague after percussion of the lung, between the second and third ribs on the right side. I made my incision parallel to the ribs for about two inches; then carefully dissecting the muscles, separating them as I went down, with a cut and separation, I reached the pleura, which was very easily recognized. The muscles were very easily separated from the pleura. I could see the excursion of the lung up and down as it fell away to a certain extent from the surface. As there were no adhesions it was clear that it would be unsafe to puncture the lungs if there was any pus there. Accordingly, when the lung was at the moment of rest between inspiration and expiration, I took a Hagedorn needle and passed it quickly through the lung itself. Two stitches secured the lung in position. I then packed the wound lightly with iodoform gauze and closed it with two stitches. After three days I reopened the wound, removed the packing and had the gratification of finding a perfectly adherent lung.

This led me still further some time since, in a case that I reported at the American Surgical Association. It was the case of a woman who had sarcoma of the chest wall, reaching from the outer border of the breast nearly all the way back to the vertebral column, and I was obliged to remove a portion of the chest wall, into which my hand would precisely fit. When this was removed the lung collapsed. I had the Fell-O'Dwyer apparatus ready for use, but fortunately in this case there was very little embarrassment of the respiration as a result of the collapse of the lung. I then introduced my left hand and seized the lung bodily—it was not invaded by the tumor—drew it forward and with a long thread of catgut and a Hagedorn needle, sutured the lung completely around the opening by a continuous suture, with a view of preventing, as far as possible, pneumothorax. Then, I replaced the flap of skin and sutured it and sealed with iodoform and collodion. The patient made a fair recovery from the operation, but had a continued fever, which led me to have a blood examination made, and I found the staphylococcus infection in the blood. This was met by the use of the antistreptococcus serum, and the patient made a complete and very satisfactory recovery. The point I wish to emphasize is the means of obtaining adhesions where none exist so that we can carry out later in a punctured lung that which may be necessary, and secondly the safety even of a very large suture of the lung tissue to the chest wall, either as in the first case locally, or, as in the second, where there is a very large area in its surface.

Dr. W. J. Means, Columbus—In the last two years I have had several cases of chest and lung troubles on which I operated. One of these cases demonstrated the possibility of recovery after a fearful gunshot wound penetrating the chest and producing extensive laceration of the lung. A boy, 16 years old, was out hunting with an old-fashioned muzzle-loading shotgun. It was accidentally discharged and the charge entered the chest below the axilla. The sixth and seventh ribs were broken, and the middle and lower lobes of the lung lacerated. The pleural cavity, when I saw him, was largely distended with blood clots. The opening was enlarged so that I could introduce my hand. When the débris was removed there was a very decided collapse. For a few minutes it looked as though death was imminent. To control the hemorrhage I packed the cavity with iodoform gauze; several yards were used. The heart soon became stronger and the respirations more rhythmical and full. The packing was removed forty-eight hours later, when the same alarming symptoms appeared, and disappeared on repacking the cavity. This phenomenon was present at every removal of the packing for some two weeks. This seems to have been a practical demonstration of the physiologic principle of the effects of destroying the equilibrium in the viscera of the chest. I recall another case illustrating the difficulty in the way of reaching an abscess cavity in the lung. The location of the abscess had been defined by an expert diagnostician. An opening was made in the chest wall corresponding with the supposed abscess. The pleural surfaces were found adherent, but no cavity. The patient had been expectorating an offensive pus for some time. The lung was explored in different directions, but no cavity could be located. The lung tissue at the point of opening was diseased and undergoing degeneration. A large opening was made through the chest wall and drainage established into the diseased lung substance. At intervals of forty-eight hours the diseased area was injected with iodoform emulsion. The patient recovered from the operation, but died four or five months later. I mention this to illustrate the difficulty in locating a cavity, and the fact that local treatment of tubercular areas of the lung will not always control the disease.

Dr. De Forest Willard, in reply—When the foreign body is not removed septic pneumonia frequently results with the formation of an abscess. Such an abscess should be opened and drained. Adhesions can be speedily produced between the two walls of the pleura so as to close off the pleural cavity before opening an abscess. With a strongly curved perineal needle with handle, a parallelogram of sutures can be carried around the area and the abscess opened at once, or twenty-four hours later. The same method may be employed in opening abscesses in the liver through the chest wall. A rib should first be resected subperiosteally, then a small amount of air should be allowed to enter the pleural cavity so as to permit the lung to recede slightly. The outer surface of the pleura and the diaphragmatic layer should then be sutured as above described, after which the liver can be reached across the pleural space, and pus evacuated without infecting the pleural cavity.

In regard to resection of the ribs, which has been alluded to this afternoon, I never use the bone forceps, since they are clumsy and are very likely to wound the pleura. With an extra-heavy flat-bladed rongeur forceps a rib can be cut through in a moment, turned back, and lifted out for any distance desired for resection, the second section of the bone being made with the same rongeurs.

THE TREATMENT OF STRABISMUS OTHER THAN OPERATIVE.[*]

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Important as is the operative treatment of squint, it is less widely applicable than the non-operative treatment. A large proportion of cases may be cured without operation. The number so cured will increase, as it becomes customary to resort to the proper measures, as soon as the deviation is noticed. But in all cases some non-operative treatment is essential to effect a perfect cure. It may not be required only in that small class of operative cases in which binocular vision and normal ocular movements are not hoped for; but in which by operation we may lessen a deformity that we can not wholly remove.

The non-operative treatment for strabismus includes the entire treatment of many cases, and the earliest treatment for all. The indications to be met by it are: 1, to bring about normal innervation of the muscles concerned in ocular movements, by the removal and exclusion of abnormal requirements, and abnormal overflow impulses; 2, to place and keep the eyes, so far as possible, upon the best plane of visual acuteness and an equality of required effort; 3, to eradicate abnormal methods of using the eyes, especially dependence upon one eye to the practical exclusion of the other; 4, to develop normal binocular vision—the method of combining the visual sensations produced by the two eyes; and the habit of employing them both in all ordinary seeing.

For the majority of cases, the time for this treatment begins as soon as the squint is first noticed. The problem of controlling the activities of a young child, and directing them along certain lines, is indeed a difficult one. But since the nerve-muscle apparatus that we are endeavoring to perfect is thoroughly plastic only during the earliest years, these difficulties must be grappled with. In the main, what I have to say in this paper deals with this most important phase of the subject. The modifications advisable for more developed patients can be very briefly indicated.

The aim of the non-operative treatment, as it is the highest aim of the operative treatment of strabismus, is the establishment of binocular vision. Of this there are many grades, beginning with consciousness of impressions made on the two eyes, and extending up to the most perfect appreciation of relative distance and relief. Probably something like binocular vision, something more than mere extension of the field by the squinting eye, exists in many cases of strabismus and may constitute an obstacle to the cure of squint. It is certain that binocular vision is possible even when the vision in one eye is extremely imperfect.

In a patient suffering from high myopia, whose vision with correcting lenses was 4/80 in the right eye and 4/9 partly in the left, were recently encountered all the difficulties of adaptation that one would expect when prescribing lenses of unequal strength for eyes with perfect vision. In a young woman whose vision in the right eye was reduced to counting fingers at 8 feet, while in the left eye it was 4/4 mostly, repeated trials of lenses correcting a part of her anisometropia ended in failure. The disturbances of binocular vision were so marked that she would not wear them. In cases of this kind, the usual tests for binocular vision may bring no response. But we can not doubt that binocular vision of a kind is thoroughly established.

The things to be accomplished in the treatment of strabismus may be classified thus: 1. The removal so far as possible of all obstacles to binocular vision. Under this head falls the operative, with a very important part of the non-operative treatment. 2. The establishment of binocular vision. 3. The perfecting of binocular vision. The latter two are to be effected wholly by the non-operative treatment.

When the patient is able to perceive simultaneously impressions made on the two eyes, binocular vision of some kind exists. The efficiency of the function is at first to be estimated by the ability to keep fused the images, under varied conditions of accommodation and convergence. Mr. C. Worth makes the ability to do this the second stage in the development of binocular vision. But I think that some power of maintaining fusion with altered accommodation or convergence begins as soon as there is ability to accomplish real fusion, although at first this power of maintaining fusion is very slight.

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[*] Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee of the Section: Drs. J. A. Lippincott, Casey A. Wood and H. V. Würdemann.

The development of the higher grades of binocular visual ability requires almost infinite practice. It may be compared in this respect with the higher grades of ability to play the piano or violin, or the mastery of the most delicate modulations of the voice. It must be acquired through the habitual use of the eyes in daily life; with such aid from glasses or suggested methods as we can give. It will not be reached merely through prescribed special exercises. With such exercises and the apparatus they require, we can only aim to bring about the rudest kind of binocular vision, and start it on the proper lines of development; although, in spite of the limitations of their usefulness, we must consider the most valuable of these appliances and prescribed methods.

Lenses.—In practical importance correcting lenses far outweigh all other measures for the non-operative treatment of squint. They remove the most common and serious obstacles to binocular vision that are removable. Their determination and use is the first step in the treatment of all cases. We can not in this discussion consider all the special indications to be met by lenses. But in every case the lenses should accurately correct all of the ametropia. Such lenses should be worn until the complete cure of the squint, or complete failure to benefit, shows them to be no longer necessary. Failure to rightly employ lenses is the most common cause of failure to cure strabismus. A very large proportion of the failures of glasses to cure strabismus in the earlier years of life must be ascribed to the fact that the glasses do not correct the ametropia. In many of these cases the glasses have been fitted by opticians. But even when prescribed by ophthalmologists of reputation and experience, one can not be sure that they are "correcting" lenses.

Case 1.—I. A., aged 6, was seen in consultation with a careful surgeon of large experience in ophthalmic work, who had prescribed R. and L. +2.75 spherical. These had been worn about five months without any marked diminution of a high convergent squint, which had during that time changed from intermittent to constant. The correcting lenses required were really

R. +4.50 ⊃ +0.50Cy. ax. 90°.
L. +5.50 ⊃ +0.50Cy. ax. 90°.

The wearing of these promptly checked the squint.

Case 2.—E. L. H., a girl aged 7, had been noticed to squint when less than 2 years old, and had been promptly placed under the care of an ophthalmologist. She had worn glasses for three or four years. Those she was wearing had been prescribed by an ophthalmologist who had seen her within a few months. After repeated examinations, he had given the opinion that glasses would do nothing more for her. That an operation was necessary; and unless he were allowed to do an operation he would not continue in charge of the case.

The child was wearing
R. +3 S. ⊃ +0.50Cy. ax. 90°.
L. +3 S.
What she really required was
R. +6.50 S. ⊃ +0.50Cy. ax. 105°.
L. +6 S.

These were prescribed and the deviation which had been 30 to 60 centrads promptly disappeared. At the end of six weeks there remained not over 5 centrads of esophoria; and in six months the muscle balance with the lenses on was perfect.

The accurate correction of ametropia being the most important single measure in the treatment of squint, and this being most effective in the earliest stage, it follows that no one who can not measure refraction objectively, no one who can not apply skiascopy with sufficient accuracy to obtain by it the data for prescribing lenses, is competent to treat strabismus.

This sounds like an extreme statement. Judging by old standards of attainment and old methods of treatment it is unduly so. But the experience of the last five years has established a new standard of success in the treatment of convergent strabismus in children, to be attained only by a method of which the foundation is the accurate correction of the refraction, at an age when the patient can give no assistance as to its measurement. In view of this, any milder statement simply falls short of the truth. The total hyperopia must be corrected. Astigmatism or anisometropia of 1 D. or less may constitute a complete bar to the re-establishment, or the renewed development of binocular vision, when the tendency to give up binocular vision has once become manifest. A fault of this kind, that would very rarely cause squint, may have to be corrected before the squint can be cured.

It may seem tedious to dwell so much on this subject of correcting refraction, but to have devoted more than three-fourths of this paper to it would only have been to give it space proportioned to its relative importance; and the cases I have cited illustrate a failure to recognize that importance which I believe is still very common among us.

Use of the Previously Deviating Eye.—In the great majority of cases this is the first point to be effected. Even though both eyes may to some extent be used, if one is distinctly preferred to the other for accurate seeing, the difference in the facility with which they are employed becomes a positive obstacle to the re-establishment of binocular vision. In general, it must be assumed that the fixing eye had originally some advantage over the deviating eye. To this advantage is added the facility acquired by habitual use for weeks, months or years. The advantage that the fixing eye now has is thus very much increased. It will not be removed by a few brief attempts to use the eye that has heretofore deviated. Weeks, months or years of continuous dependence upon the previously deviating eye might fairly be expected to be necessary to overcome such a disadvantage. In view of this, it is surprising what may be gained in this direction by a very moderate use of the poorer eye. But it should be understood that in most cases this using of the worse eye can not possibly be overdone.

The occlusion pad or bandage, which completely excludes the better eye, is the only thing that will serve the purpose, if the vision of the squinting eye is very much reduced. For older persons, it can often be used but a small part of the time, but for very young children it may be kept on almost constantly, removing it only often enough and long enough to ensure the health of the covered eye.

The essentials of such a pad are, that it shall absolutely prevent vision with the covered eye; and that it shall act as little as possible like a poultice. The ordinary roller bandage may be used, but generally some special form arranged with tapes will be found more available. If the child can be watched, a mass of absorbent cotton stuffed behind the correcting lens of the better eye will answer. But usually I find it better to hold the cotton in place by one or two strips of adhesive plaster, as with the simple dressing used after cataract extraction. To avoid the pulling on the skin when the plaster is removed, it may be applied to a piece that is left in contact with the skin continuously. The use of the occlusive pad should be continued until, if this be possible, the vision of the worse eye has so improved that it will be used for fixation when the other eye is kept under a cycloplegic.

The Use of Cycloplegics.—The so-called mydriatics are to be used in this connection for their power to produce cycloplegia, not merely to dilate the pupil. An enlarged pupil is not sufficient evidence that the drug is being used effectively. The slightest reaction of the pupil to light proves that the eye is not completely under the influence of the drug. It is necessary from time to time to test objectively the power of accommodation, or the absence of accommodation, to make sure that the cycloplegia is properly kept up.

In all cases, cycloplegia is required for the determination of the ametropia. It may then be continued in both eyes to prevent the abnormal innervation associated with accommodative effort. In cases of alternating squint, this is sometimes of particular value.

In monolateral squint, however, after the correction of the ametropia, the cycloplegia should more frequently be confined to the better eye. It thus serves as a means of compelling the use of the previously deviating eye. As above indicated, it can only be thus applied for those cases in which the paralysis of accommodation of the fixing eye, the other retaining its accommodation, causes the transfer of the squint. If cycloplegia of the better eye does not accomplish this, we must use the pad. But if it does cause the transfer of fixation, it is a measure superior to the pad, because it is constant in its influence, requires less attention, does not interfere with the health of the eye, and leaves binocular vision possible, under favorable circumstances, if there be a tendency to establish it.

When employed in this way, cycloplegia should be continued until fixation, even at a distance with correcting lenses, is most of the time done with the previously deviating eye, or until all gain in this direction has entirely ceased. The length of time that the mydriatics should be thus employed is somewhat proportioned to the age of the patient, or at least, to the duration of the strabismus. But it will usually extend to several months and may go on to years.

The use of a mydriatic formerly advocated, as a substitute for correcting lenses in children too young to wear glasses, is now a very limited one. Nearly all children old enough to have a decided strabismus, as distinguished from the irregular uncoördinated eye movements of infancy, are old enough to wear glasses. They will wear them without objection if the ametropia be high enough to be of much importance, and the eyes are kept under a mydriatic for a few days after the glasses are put on.

But the mydriatic can not fully replace correcting lenses. It may remove the tendencies associated with excessive effort of accommodation, but it does not bring up the vision of the poorer eye, or place it more nearly on a plane with its fellow, as regards effort necessary for use. It removes an important cause of squint, but it does not, like the correcting lenses, bring about the conditions most favorable to the development of binocular vision.

Exercises for the Development of Binocular Vision.—The first thing aimed at, is to induce the patient to see with both eyes at once. This is first to be effected by using most striking objects. The light used for the subjective measurement of squint or heterophoria is a good object to begin with. The bringing about of diplopia, measuring the separation of the images, varying their relative position with prisms, and their relative strength by the use of dark glasses before the better eye, are excellent exercises of this kind. For young children such exercises must be of the simplest character, and on this account the fusion tubes of Priestly Smith are of especial value. They are two entirely separate tubes to be held by the child, one in each hand. This giving of something for the hands to do, and the freedom of movement, and the variety of movements which may be made, aid in keeping up the child's interest in the exercises. Sometimes it may be necessary to enfeeble the image of the better eye by use of a dark glass, or of a piece of paper of the proper thickness and translucently pasted over the tube used for this eye. But generally if the two streaks can be seen no such modification is necessary.

The Reflecting Stereoscope.—Next to the fusion tubes may be placed Worth's modification of the reflecting stereoscope. It is more adaptable and more rudimentary than the ordinary stereoscope. It can be used for lateral deviations in the same way as the fusion tubes; and in the main it offers the exercises of a stereoscope. It furnishes employment for the child's hands, and the figures used with it may be indefinitely multiplied.

The Ordinary Stereoscope.—This is of service for certain very valuable exercises and its range of usefulness may be extended by employing specially prepared pictures. The ordinary stereoscopic lenses are so decentered that they act as prisms with the base out. The distance between the optical centers of the two lenses is about 85 mm. With an ordinary pupillary distance of 61 mm., this gives a decentering of 12 mm. for each lens; or with the 5 D. lenses usually employed gives a prismatic effect of 6 centrads for each eye. For children with a small distance between pupils, the decentering is still greater. For 55 mm. it would be 7.5 centrads prismatic effect. The pictures ordinarily used in the stereoscope are so broad, 85 mm., that the prismatic effect is required to render parallel the rays which enter the two eyes from corresponding points of the two pictures. If we make the pictures narrower, and bring them correspondingly closer together, the same prismatic effect will allow them to be seen with convergence. Thus, for a child with a distance between the pupils of 51 mm., pictures 51 mm. wide, placed in close contact, will have their corresponding points fused with a convergence of 34 centrads—almost 20°. These narrower pictures are very readily made by cutting down larger pictures, or in drawing the rude diagrams that often prove serviceable in the orthoptic training of young children.

The stereoscopes arranged for the adjustment of the width of the glasses, or the positions of the pictures, or both, are capable of the same service, and of other uses. But I shall here dwell only on the more common form of the instrument; because its simplicity gives it a much wider range of application. That instrument is of the most value which can be trusted to the child under the supervision of the parent or caretaker, rather than one to be used for a brief time in the office of the surgeon.

As has been indicated above, these exercises must be practiced a considerable portion of the time to be of great service. The object of the first exercises with the stereoscope is to cultivate the ability to see with both eyes at once. For this purpose a series of pictures is required, the two halves of which differ, but are so related that they may be appropriately superimposed. The picture of the bird presented to one eye, and its cage to the other, is typical of this sort. The stimulus to co-ordinate action is given, when the child is induced to try to get the bird into the cage, or into the center of the cage. Exercises of this character prepare the way for more advanced efforts. They also remain of great use throughout the treatment. Even when normal binocular vision has become habitual, it is worth while to recur to them.

If the child has previously had some practice with fusion tubes, the second class of pictures may soon be brought into use. In these, some portion is common to both pictures. This portion must be fused to avoid diplopia, while the completeness of the picture proves that single vision is not obtained by excluding one eye. Pictures of this sort are less interesting to the child, because their component parts have a single fixed relation; and do not offer the same opportunity of conscious adjustment. On this account one should have a large series of them and should supply them a few at a time. They may be made out of ordinary stereoscope pictures by cutting off different corners from each, or by placing a dot on one, and a cross on the other, and making sure that the whole picture, or both dot and cross are seen.

When binocular fusion is well advanced, the distance between the pictures and the lenses may be varied. If the pictures be wider than the pupillary distance of the patient, variation of the distance from the eye will cause slight variations in the actual amount of convergence. If the width between corresponding points of the pictures equals the pupillary distance, pushing them nearer to or farther from the lenses will make no difference in the convergence required. But it will alter the necessary state of accommodation; and a change of relative accommodation is an exercise of very much the same value as change in relative convergence.

The Reading Bar.—One other practical device remains to be noticed—the reading bar. It provides a highly specialized exercise, depending for its value on the fact that our printing arranges words in long lines, each of which must be followed throughout its whole extent in rapid succession. The bar excludes the habitually seeing eye from seeing some portion of each line, compelling the use of the deviating eye for that part of the time. It has the advantage that it can be employed while pursuing a customary occupation. This is a great advantage within its somewhat narrow sphere of usefulness. I have found it of most value in the preparation of older patients for operation; and in establishing a new co-ordination of eye movements after operation.

Increase in Population in France.—The latest census shows that France has gained 412,364 inhabitants during the last four years. The *Sem. Méd.* adds that this is three times the gain of the preceding four years.

THE STRABISMUS OPERATION.*

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Though a somewhat hackneyed subject, the last word has not yet been spoken upon the strabismus operation, nor will it be for many years to come. While without doubt it is true that excellent results may be obtained in the correction of strabismus by a variety of operative procedures, it is also true, as I think every operator present will acknowledge, that there is a diversity in the results of this operation which plainly indicates that perfection has not yet been obtained. I offer no apology for occupying your time with the consideration of a department of ophthalmic surgery on which such diverse opinions are expressed as we may find in the text-books and articles which appear from time to time on the various phases of this subject.

An analysis of the opinions expressed by a limited number of operators of national and even international reputation will show a divergence of views not only as to details, but on such important points as the following: 1, as to the degree of deviation and the character of the cases which they consider proper subjects for operation; 2, as to the age at which an operation should be performed; 3, as to the choice between tenotomy and advancement; 4, as to the amount of deviation that may be safely corrected by tenotomy; 5, as to whether the operation should be confined to the eye which most constantly deviates or its effect distributed between the two eyes so as to preserve the ocular balance; 6, as to full correction of the error in the first operation or delaying a portion of the operative procedure until the effect of the first division may be properly estimated; 7, as to the practicability of partial, or graduated tenotomy or advancement; 8, as to the value of orthoptic exercises before and after operation; 9, as to the value of tests made with prisms and otherwise during the progress of an operation; 10, as to the importance of the subconjunctival method of Snellen and of suturing the conjunctival wound; 11, as to the necessity of bandaging one or both eyes after an operation for tenotomy or advancement; 12, as to the relative importance of operations upon the superior and inferior recti muscles in cases of hyperphoria and hypertrophia associated with lateral deviations, and 13, as to the most approved form of operation for tenotomy and advancement.

I fully realize that different methods will always have their advocates and it is no part of my intention to undertake to harmonize the views of the members of this Section, but in view of the divergence of theories and methods of procedure which now prevail, is it not proper that each of us should study the plan pursued by his associates and assure himself that he has not been committing that common error of successful surgeons of being too well satisfied with his own methods and results? I am persuaded that when the last word has been spoken on this subject we will have greater consistency in methods and far greater uniformity in results than now prevail.

Dr. Herman Knapp in his excellent chapter on operations,[1] makes the following statements: "1. After a tenotomy of the internal rectus the primary effect is apt to diminish for several days, but then, as a rule, it increases gradually for weeks, months and years. In many cases we rejoice at having obtained a perfect cosmetic result, but when we see our patient again in later years his eyes diverge more or less. 2. The immediate effect of a tenotomy of the external rectus increases the next three or four days, then it diminishes very gradually, so that the ultimate result is frequently not more than two or three millimeters, and at times it disappears altogether."

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* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee of the Section: Drs. J. A. Lippincott, Casey A. Wood and H. V. Würdemann.

[1] Norris and Oliver's "System of Diseases of the Eye," vol. III.

An over-correction after division of the internal, and an under-correction after division of the external rectus is then of not infrequent occurrence after a tenotomy even when performed by so careful an operator as Dr. Knapp, and I think every operator of wide experience will agree with me that, in spite of the most painstaking observance of every rule which prudence may dictate, in the correction of high degrees of convergence, we are often disappointed in our final results.

In contrast with this note the following statement made by Landolt,[2] who for a number of years past has been advocating the substitution of advancement for tenotomy as a routine measure: "In twenty years' practice we have never had an over-correction after advancement, which is frequent after tenotomy. We have never produced a strabismus, which can hardly be avoided after tenotomy, at least in the secondary position. The advancement has also the cosmetic advantage of not causing annoying protrusion of the eyeball, sinking of the caruncle, or exposure of the sclera."

If one of these plans of procedure is correct the other is certainly questionable, and yet there are many advocates of each. By far the majority seem, at least in their practice, to still prefer tenotomy when it can be made to serve their present purpose. It is more in keeping with our traditions and is less tedious; but it is a significant fact that, while even approximately perfect equilibrium of the ocular muscles after well-marked strabismus is, as we all realize, most difficult of attainment, such a result is claimed in many instances by those who advocate Landolt's method, and are willing to take infinite pains to obtain it.

A few years ago there was, as will be remembered, a strong reaction against those extremists who claimed to be able to work miracles in all nervous diseases by slight-of-hand performances upon the ocular muscles. This reaction was timely and proper, but we should not be led so far in the direction of conservatism as to prevent our accepting and adopting every improvement in method and technique which has a rational basis.

A careful review of the subject and what personal experience I have had in this direction, leads me to make the prediction that within a few years many of those who have heretofore depended mainly upon tenotomy for the correction of strabismus will find themselves adopting the more tedious but far more conservative operation of advancement, or resection almost as a routine practice.

While, for the purposes of this paper, it is not practicable to consider fully the anatomy of the ocular muscles, there are a few practical points which it will be well to review before passing on to the subject of operations. The oculo-orbital fascia, in the descriptions of which great variations are found, should be dealt with as a mass of more or less condensed connective-tissue fibers, differentiated into a dense membrane in certain portions, while in others it is made up of somewhat loose connective tissue joining the conjunctiva to the eyeball and to the sheaths of the tendons of the recti muscles and also uniting the sheaths of these muscles somewhat loosely to the sclera. The lateral or restraining fibers connect the sheaths of the muscles with the more condensed portions known as Tenon's capsule. The effect of this anatomical arrangement is that a division of the tendon at its insertion, provided the lateral fibers remain intact, results in a limited retraction of the tendon and its secondary insertion at a point only a short distance posterior to its former point of union with the sclera. The passing of a hook beneath the tendon and breaking up of the loose fibers which unite its sheath with the sclera, adds very little to this retraction. The division of the fibers which unite the sheath of the muscle with the conjunctiva, adds more to the power of retraction, but if we wish to obtain free retraction of the muscle we must divide the lateral fibers connecting it with the more dense portions of Tenon's capsule which lies between the muscles, or what in fact amounts to the same thing, separate this capsule from the sclera above and below the point of insertion of the tendon. The foundation of all theories which deal with the subject of tenotomy and advancement lies in the relations of the tendons and muscles to this oculo-orbital fascia, or to be more exact, that portion of it which is termed Tenon's capsule. The tendons of the recti muscles are inserted at points varying somewhat in distance from the margin of the cornea: The internal rectus at a distance of 5.5 mm., the inferior 6.5 mm., the external 6.9 mm., and the superior 7.7 mm. The widths of the tendons also differ in the following order: internal 10.3 mm., inferior 9.8 mm., external 9.2 mm., superior 10.6 mm.—Fuchs. In length the tendon of the internal is 8.8 mm., the inferior 5.5 mm., the external 3.7 mm., and the superior 5.8 mm.—Merkel.

It is well in operating to remember also the peculiar insertion of the superior rectus muscle. It is quite wide, and at the nasal side is inserted much farther forward than at the temporal. It is so set that the bulk of its insertion is on the outer half of the eyeball. The inferior rectus on the other hand is so inserted that its temporal border is slightly in advance of the nasal. The measurement (3.7 mm.) given above by Merkel as the average length of the tendon of the external rectus muscle, does not conform to the impression I have obtained in the advancements and tenotomies which I have made.

In a number of resections of this tendon I have removed more than 3.7 mm., and obtained excellent results. It is possible that in doing so I may have included some of the muscular fibers.

For our purpose the various operations resorted to for the correction of strabismus may be classified under the following heads:

Tenotomy.—1. Partial division of the tendon (graduated tenotomy). 2. Complete division of the tendon. 3. Complete division of the tendon, with division of the lateral fibers of the capsule.

Advancement.—1. Partial advancement of the tendon (graduated advancement). 2. Complete advancement of the tendon. 3. Complete advancement of the tendon with advancement of the capsule. 4. Resection of the tendon. 5. Resection of the tendon and capsule.

In all of our operations for the correction of strabismus, the following general rule should be observed and exceptions to it are seldom justifiable: Whether we operate by tenotomy or adopt the more conservative method of advancement, the effect of the operation must be so distributed between the various muscles as to preserve the control of the eye in all ordinary movements.

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[2] Archives of Ophthalmology, vol. xxvi, p. 8.

A simple tenotomy will, according to Fuchs, correct about 3 or 4 mm. of convergence. In divergent strabismus, he has found that a simple tenotomy will not correct more than 2 mm. as an average. In view of the effects which we have all obtained in some of our earlier operations, this rule seems extremely conservative, but if we confine our division to the tendon at its point of insertion and avoid division of its lateral attachments, I do not believe it is safe to expect a much greater result than he has indicated, and in my own operations where I have depended upon tenotomy, I have seldom gone far beyond this limit without having reason to regret it.

Many rules have been laid down to enable the operator to avoid the excessive effects which often follow as a late result of tenotomy, but in difficult cases it not infrequently happens that, in order to obtain even a moderate degree of correction, these rules are violated. When more than 3 mm. of convergence, or 2 mm. of divergence is present, if tenotomy is relied upon, the effect should be divided between the two eyes rather than by operating upon one alone to obtain a correction at the expense of a free division of the lateral attachments.

Knapp lays down the following rules to govern the operator in tenotomy: "A. As a rule no squint operation should weaken the muscle beyond its physiological limit of power. B. After a tenotomy of the internal rectus, the result of the immediate examination should be as follows: 1. In adduction the medial margin of the cornea should readily reach the caruncle. 2. The near point of binocular fixation should not be less than 5 centimeters—two and one-half inches. 3. The eyeball should not protrude. 4. There should be some convergence left."

If these rules are strictly adhered to and the lateral fibers are left undisturbed, we may undoubtedly avoid an—immediate—over-correction, but the weak point in such a system of rules is that, if strictly adhered to, only a slight correction of 3 or 4 mm. is obtained and, even if the operation is divided between the two eyes, a careful examination of the field of fixation will almost certainly reveal some limitation of motion.

How often it has happened in the experience of each of us that after such a tenotomy the immediate result has been not only insufficient but almost nil and to save ourselves and the patient from the chagrin of a sense of failure, we have divided first a few and then a few more of the lateral fibers and then wondered whether we would not at some future time discover that we had slightly over-corrected the error.

Now it is a fact that even the setting back of the tendon alone, if it is sufficient to give us 3 or 4 mm. of correction must, to a limited degree, restrict motion and violate the spirit of the first of these general rules.

The very essence of such an operation consists in the fact that the control which the muscle exercises over the eye is made less effective, whereas it should be our object not to lessen but to increase this control. The movement of an eye, in a given direction, depends not alone upon the contraction of the single muscle which turns it in that direction but also, and only to a less degree, upon the co-ordinated movement of its antagonist, while both of these must again act in harmony with the corresponding muscles of the other eye. In any squint not dependent upon paralysis or traumatism, surgical or otherwise, of one of the muscles the squinting eye, while having an improper direction, still moves in harmony with its fellow and its excursions are usually of the same amplitude. If we wish to preserve the harmonious relation of the four muscles which take part in this somewhat complicated act of co-ordination is it reasonable to begin by an avowed attempt to cripple one of them?

It is a mistake, as Landolt has pointed out, to suppose that the antagonist gains in strength what the tenotomized muscle loses and, even if it did, it is not proven that the muscle we divide has more strength or more power to move the eye than it should have. It is a question not of power but of direction with which we are dealing and the choice between tenotomy and advancement reduces itself to this: Is it better that the group of four muscles acting to produce harmonious movements of the two eyes, should have the aggregate of control which they exercise over the eyes increased by giving one of its members a more advantageous attachment, or diminished by setting another back and thereby lessening its control?

In the latter case we gain the proper direction, but in so doing we make a distinct sacrifice of a portion of the control which the group exercised over the eye, while in the former we also gain the proper direction but increase the aggregate of control by giving to one of the members an advantage in moving the eye which may be exercised or not as circumstances may demand.

I do not wish to be understood as advocating so radical a change in the accepted method of dealing with squint as the entire substitution of advancement for tenotomy, though that would seem to be the logical outcome of the above reasoning.

Advancement is so tedious and tenotomy so simple an operation that the latter will probably always be preferred in slight deviations, but whenever a deviation exceeds 5 mm. it is proper to raise the question whether an advancement should not be substituted for tenotomy; and whenever in any case of tenotomy it is found that the proper effect can not be produced without considerable division of the lateral attachments of the tendons an advancement should be substituted or should supplement the tenotomy.

As to the best method of performing a tenotomy or advancement, it is my opinion that equally good results may be obtained in a variety of ways, provided certain general principles are observed, and it is with general principles that we are here dealing rather than with the details of special methods of operating. these principles the most important relates to the division of the effect between the various muscles and the preservation of as complete control of the eye by each muscle as may be practicable. If the deviation is slight and a tenotomy is decided upon I greatly prefer the method of Snellen as modified by Stevens—a sub-conjunctival operation—buttonholing the conjunctiva and tendon and cutting both ways. But in those relatively frequent cases in which, after the first incision, there is well-marked hemorrhage beneath the conjunctiva, I at once convert the small incision into a large open wound in order to avoid a troublesome sub-conjunctival thrombus.

Careful measurements, linear, angular and by prisms, before, during and after the operation, I consider of the utmost importance, but in cases in which there is marked amblyopia we must judge mainly by inspection and for this purpose there is a great advantage in operating in a dental or other reclining chair and in having the patient in the upright position while testing so that the operator may stand off at a distance of eight or ten feet and observe the movements of the eyes. An examination made at the near point is often very misleading. If the operation is divided between the various muscles of the affected group and, in case the deviation is marked, is corrected mainly by a well-performed advancement or resection, measurements are of great value, but in the old method of operating in which the tendon was divided at one cut and what deviation remained was corrected by free division of the lateral attachments, the eye became so unstable that measurements made at the time of operation afforded very little information as to what the final position of the eyes would be.

It is not infrequently the case after a carefully performed operation for convergent strabismus as a result of which the eyes occupy approximately the proper position, to have, owing to the presence of what is sometimes termed a false macula, a well-marked heteronymous diplopia with the images widely separated.

This is probably due to what Dr. Berens has well termed "neuro-muscular memory," and should not disconcert us as it seldom causes serious disturbance, though it may make it more difficult to judge of the accuracy of the result obtained. We are, in fact, forced in such cases to depend entirely upon objective tests. It must, of course, be borne in mind that the more extensive the traumatism inflicted during the operation the more unreliable are the results of measurements made immediately after operating, and this is an additional argument in favor of advancement in its various forms, as by this means we seldom have an over-correction and by allowing a portion of the deviation to remain, we may at a subsequent operation gauge the result accurately in a supplemental tenotomy, correcting the slight remaining defect.

In tenotomy we should, so far as may be practicable, let the capsular attachments alone if we wish to avoid crippling the combined movements of the eyes, but in advancement or resection it is desirable, in our attempts to increase the control exercised by a given muscle, to bring forward or shorten the capsule with the tendon. In so doing we gain another advantage which is of great importance, in obtaining a firm hold for our sutures. In fact, in the resections which I have performed of late, I have made free use of sutures, practically quilting the tendon and capsule together, and have thus avoided a very annoying feature of some of my former advancements in which the effect would be in part lost within a few days owing to the insufficient and uncertain hold obtained by sutures introduced in the usual manner in the tendon alone.

While it has been greatly improved within a few years, there is room for still greater improvement in the operation for advancement. Before the days of asepsis advancement was indeed a formidable operation, often being followed by decided reaction, and even as now practiced when we compare it with tenotomy it is not strange that a beginner in ophthalmic surgery should, when in doubt, prefer the latter. But the question of a little more or less annoying detail in the operation should not be allowed to weigh against any advantage we may gain for our patients, and advancement should be unhesitatingly performed when it is apparent that it will produce a better final result.

The old operation, by which the tendon is split in its center and one portion drawn forward above and the other below the cornea, while certainly effective, has seemed to the writer unnecessarily complicated. Any method which, with a freely exposed field of operation, succeeds in securing and evenly mooring the tendon and capsule of Tenon to the sclera at a point well in advance of its former point of attachment will accomplish the desired end and, in cases of less marked deviation, a method which resects a sufficient amount of the tendon and capsule and firmly sutures the distal to the proximal portion will also yield an excellent result.

Because of the thorough manner in which the field of operation is exposed, probably no method is a greater favorite with those who have tried it than that devised by Dr. Savage of Nashville, by which an L-shaped primary incision is made, one side of which is parallel with the line of insertion, and the other parallel with one border of the tendon and the flap turned well back and held out of the way by a suture while the tendon is advanced or resected.

The method of capsular advancement advocated by Dr. Fox of Philadelphia for cases in which there is extreme deviation certainly has the advantage of simplicity and the results he reported to this Section last year were excellent, but I have been thus far deterred from adopting it owing to the amount of traumatism inflicted and a feeling that I would prefer to see the tissue with which I am dealing in an operation of such delicacy.

With the exception of those cases in which the degree of deviation is excessive, resection affords excellent results and for several years I have been endeavoring to discover some method by which I could simplify the ordinary procedure and substitute it, so far as is practicable, for tenotomy. I found that by introducing a tenotomy hook in the ordinary manner and then seizing the fold of tendon beneath the hook with Prince's advancement forceps, I could gauge the amount of tendon removed by the point at which the forceps' blades were applied and suture it thoroughly and evenly at my leisure.

This led me to devise the small double hook which is figured in the report of this Section for last year and which in a number of instances has since served an excellent purpose.

After making a vertical conjunctival incision as long as, and one or two millimeters behind the insertion of the tendon, I make in Tenon's capsule two short cuts with the scissors parallel with and a short distance above and below the tendon and extending from its point of insertion backward to a distance equal to the amount of shortening desired. The central blade of the hook is now inserted below and made to include the tendon and that portion of Tenon's capsule which covers it and by turning the milled head this central hook with the tendon and overlying capsule is drawn up between the other two blades to such a distance as may be desired. Interwoven sutures are then inserted, firmly stitching the two surfaces of the folded tendon together, after which the hook is removed, the apex of the fold cut away with the scissors and the conjunctival wound closed with fine silk sutures.

A comparison of the writings of various acknowledged authorities on strabismus reveals in the after-treatment the same diversity of opinion as is observed in other departments of this subject. While Dr. Duane of New York prefers after tenotomy to keep the eyes open and practice orthoptic exercises before the wound is firmly united in order to obtain binocular fixation, Dr. Landolt, on the other hand, keeps both eyes bandaged during the healing process, often insisting upon the patient remaining in bed for six days. Between these extremes we may find every variety of directions given to patients as to their conduct after operation, which only proves that, as in other departments of surgery, fair results may be obtained in a variety of ways. And, while I have obtained good results by the course I have pursued, which may be said to be midway between these extremes, I am free to admit that it would give me the greatest pleasure to be able to observe minutely the progress from day to day of the patients treated by both the methods described, as certainly Dr. Landolt's reports indicate a higher standard of final results than is claimed by many operators, and under such circumstances it is becoming that we should at least hold our minds open to conviction.

In conclusion, I would state as my conviction that, in the correction of strabismus, advancement, or resection combined with a very limited tenotomy, should, as a rule, be substituted for simple tenotomy.

ARTIFICIALLY PREPARED FOODS, THEIR NUTRITIVE VALUE AND DIETETIC APPLICATION.

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DETROIT, MICH.

The history of the scientific production of artificially prepared foods, like that of the subjects of digestion, nutrition and metabolism, is nothing more than a summary of the achievements of the experimental sciences relating to general biology and the science of medicine.

Investigation of the various empiric dietetic systems, from the time of Aristotle up to the end of the eighteenth and the beginning of the nineteenth century, shows that, while various grain decoctions, ptisan, almond, egg and sugar-water and probably a few other dietetic preparations were used for invalids, no preparation existed which might lay claim to being an artificially prepared food in the sense that the term is used to-day. Far reaching and revolutionary were the discoveries which ushered in the birth of the exact knowledge of nutrition and dietetics![1] On the one hand we had the discovery of oxygen by Priestly and Scheele in 1774, and the subsequent development of the theory of oxidation by Lavoisier in 1780; on the other hand was the investigation of Spallanzani and Reaumer, in 1752, on the subject of digestion.

Let us here rapidly sketch the outlines of the growth of our subject and review the fundamental principles by which the nutritive value of foods may be judged and the nutritive demands of the human individual adjusted. In this manner we shall be able to appreciate the status of our subject and to determine the applicability of artificially prepared foods to the diet of man in health and disease.

Although from the time when Lavoisier defined the processes of oxidation, up to, and even beyond, the first quarter of the nineteenth century, considerable work had been done on the subject of nutrition, little was really accomplished until the theories of Liebig, the greatest chemist of that century, were shown to be incorrect. As late as 1842 very little was known of the nutritive and physiologic significance of albumin, fat and carbohydrates. It was during this period that Liebig believed that the destruction of albumin served the purpose of furnishing the organism with energy for the execution of mechanical work, while the oxidation of fats and carbohydrates was supposed to furnish heat to the body and protect the albumin from unnecessary oxidation. It was very soon shown, however, that this explanation was incorrect, for experimental evidence was brought forward which proved that the increased ingestion of albumin by an animal at rest was accompanied by a corresponding increase of nitrogen excretion. Important as was the demonstration of this fact, its exact significance was unfortunately misconstrued, and, in consequence, gave rise to much controversy and years of laborious experimentation. It was now taught that the minimum quantity of albumin necessary to the animal organism was expressed by the quantity of albumin disintegrated during inanition. Finally, during the years 1857-60, Bischoff, Voit and Pettenkofer published the results of their experimental work, and it was at this time really that the cornerstone of nutrition, as an exact science, was laid.

For the continued normal expressions of the functions of an organism, the ingestion of a certain and definite quantity of food is requisite. This general biologic law manifests itself, irrespective of theoretical speculation or scientific observation, in the expression of the instinctive impulse which guides every organic entity in its selection of the requisite quantity and quality of food. However, not until Helmholtz and Meyer formulated the theory of the conservation of energy, did we fully appreciate the philosophy of this law.

Every organic function is accompanied by the production of heat, which finds its origin in the oxidation of definite chemical combinations, the absorbed and assimilated products resulting from the digestion of substances termed foodstuffs. The amount of heat which an organism gives off is equivalent to the calorimetric value of the food which it requires in a given period of time. The food which the system requires is represented by the nutrient principles, albumin, carbohydrates and fat, each one of which may substitute or replace the other, but only, as we shall point out later, within the limit of their minimum nutritive or physiologic quantity. Irrespective of the relative proportions of each one of these food principles, the total heat requirement of the organism remains the same.

Every foodstuff possesses a certain caloric value, which is expressed by the term calorie, and each represents that quantity of heat necessary to raise one kilogram of water from 0 to 1 C. It is customary to express the total quantity of nutriment necessary to maintain the nutritive demands of an organism by the caloric value of the food introduced into the system. Instead of simply stating that the system requires so much each of fat, albumin and carbohydrates, we express it by the number of calories which the system requires in a given period of time under definite circumstances, presupposing always that these three foodstuffs be contained in certain proportions and in definite relationship to each other. Although this is a very convenient method and the one now generally followed, it is not strictly logical, because it neither embraces the valuation of the nutriment required to rebuild the wasted tissue of the body, nor, in the organism at rest, the amount of energy expended in the carrying on of circulation, heart beat, respiration, gastro-intestinal and glandular activity.

Expressing, therefore, only partly the metabolic significance of a given food, the caloric method is, nevertheless, the most convenient we have at our disposal at the present time. This method is founded upon the fact, to which we have already alluded, that the amount of heat given off by an organism is practically equivalent to the calorimetric value of the food which has been introduced into it. When fat, albumin, carbohydrates or gelatin is subjected to calorimetric estimation it is found that each has a definite caloric value, thus one gram each of these foods equals the following: Albumin, 5.7 calories; gelatin, 5.5; fat, 9.3; starch, 4.1; cane sugar, 4.0, and glucose, 3.7 calories.

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[1] Breisacher: The Principles of Metabolism and Nutrition.

The method of calorimetric estimation of foodstuffs consists in introducing a given quantity of food material into a specially constructed bomb, which is filled with oxygen under a pressure of from fifteen to twenty-five atmospheres. After the bomb has been submerged in water, the substance under examination is ignited by means of electricity and an estimation made of the heat imparted to the water.

It has been shown that fats and carbohydrates when introduced into the system are oxidized into carbonic acid gas and water, and further, that when subjected to the action of a calorimeter they undergo a like change. With albumins, however, the matter is somewhat more complicated, for, while they are oxidized into nitrogen, carbonic acid gas, water and a small quantity of sulphuric acid in the calorimeter, in the animal organism they are split up into urea, uric acid, kreatin, kreatinin, hippuric acid, etc. To determine, therefore, the caloric value of albumin to the system it is necessary to subtract the caloric value of these organic oxidation products.

By this method of calculation we find that the physiologic nutritive value of albumin is 4.1, compared with its calorimetric value of 5.7. The physiologic heat or caloric value of fat and carbohydrates is identical with the calorimetric value. The physiologic or nutritive caloric value, therefore, of one gram of fat is 9.3, of one gram of carbohydrates, 4.1, and of one gram of albumin it is also 4.1. Fat, albumin and carbohydrates form the three chief nutrient principles which enter into the diet of a human individual. The necessary quantity of each one of these separate nutrient principles required by the system, and the relationship of one to the other, is dependent upon varying circumstances. The relationship of fat, carbohydrates and albumin in the diet of an infant is not identical with that in the diet of an adult, neither is the required relative quantity of these nutrient principles, estimated per kilogram body weight, the same in the mature as in the immature organism. Further, the demands of a weakly developed inactive organism are different from those of a laborer or an athlete. In accordance with the law of substitution, each nutrient principle may be substituted for the other, within its minimum physiologic limit, as recent experiments have conclusively shown.[2]

A thorough comprehension of these laws, which I shall define more particularly later on, is absolutely necessary in the rational feeding of both healthy individuals and invalids. The fundamental principles, upon which our entire knowledge of the subject of nutrition is founded, are the result of experiments made upon human individuals and animals. Among the most important are those experiments made upon fasting individuals. When food is absolutely withheld from a man weighing about 70 kilograms—154 pounds—for a period lasting from twenty-four hours to a number of weeks, it is found that the system loses from 50 to 80 grams of albumin and from 200 to 250 grams of fat, each day. In a single twenty-four-hour period the loss of water is from 800 to 1000 c. cm.; in longer periods, the subject of the experiment is usually given a sufficient amount of water to cover this loss.

The execution of a certain amount of mechanical labor during a period of fasting increases the fat consumption and water exhalation while the albumin waste remains the same as in the fasting individual at rest. It has further been shown that persons provided with an abundant supply of adipose tissue withstand the influence of fasting more effectually than lean individuals, for the reason that in the former the adipose tissue furnishes the major percentage of caloric demand of the organism, thus protecting the albumin supply from excessive waste.

The size or bulk of an individual also determines the total fat and albumin consumption of the system, and it has been demonstrated that, while the absolute quantity of albumin and fat may be greater in the larger individual than in the smaller one, the relative quantity of both of these foodstuffs, estimated per kilogram body weight, is greatly in excess in the smaller or less bulky individual, than in the larger one. This law is equally invariable, irrespective of whether the food consumption refers to a fasting or normally fed individual, or whether it be applied to an infant or an abnormally large or small adult. The nutritive demand per kilogram body weight, therefore, is in an inverse proportion to the size or bulk of the organism.

If an animal from which food has been withheld for a certain period of time, i. e., a number of days or weeks, be fed meat it will be found that the nitrogen excretion, as expressed by the nitrogen in the urine, is increased, and, with each additional increase of albumin (meat) to the diet, the excretion of nitrogen is increased proportionately. This increase of nitrogen excretion continues until sufficient amount of albumin (meat) has been added to the diet to effect a nitrogen balance, that is, a nutritive condition in which the nitrogen income is equal to the nitrogen outgo. It was taught by Voit that the quantity of albumin necessary to cover the albumin loss of the system was two and one-half times greater than the loss resulting during a period of fasting. This, however, is not strictly correct, as the writer and several other investigators showed in a series of nutrition experiments.[3]

In addition to the loss of albumin, the fasting individual suffers a distinct loss of fat from his organism, and it has been found that, by insuring the absorption of fat equivalent to the loss of adipose tissue during fasting, the fat consumption may be checked while the albumin destruction remains unchanged. It follows from this that the ingestion of fat by a fasting animal may prolong life, but not prevent ultimate death from starvation. The exclusive feeding of carbohydrates, like that of fat, does not prevent the occurrence of death by starvation, although they protect the system from albumin destruction more effectually than fat.

If a definite quantity of fat and albumin is given to an individual who has been subjected to a period of fasting, it will be noticed that the loss of organic or body albumin is arrested. This does not occur when simply fat or carbohydrates are given and which can not be practically achieved in the human being by an exclusively albumin diet. Fat, whether existing in the system as adipose tissue or introduced into the system as food, protects the organic albumin from undue waste.

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[2] Breisacher: (a). Eiweissbedarf beim Menschen; (b). Principles of Metabolism and Nutrition.

[3] Breisacher: Eiweissbedarf beim Menschen.

When along with a requisite amount of albumin, more fat is introduced into the system than the total caloric demand requires, an increase in the supply of adipose tissue is achieved. When carbohydrates, in the form of sugar, starch or dextrin, are added to a diet composed simply of albumin, the destruction of the latter is lessened, and, as in the case of fat and albumin, if a sufficient quantity of carbohydrates be added to a requisite amount of albumin, the loss of organic albumin is arrested. Likewise, when carbohydrates are added to a combined fat and albumin diet, the total consumption of both of the latter is lessened. The effect, however, of like quantities each of fats and carbohydrates, in retarding albumin consumption, is not identical. Notwithstanding the fact that a gram of fat represents a caloric value, which is 5.2 greater than a gram of carbohydrates, it has less influence in checking albumin waste than the latter. As we have already pointed out, when an excess of fat is fed to an individual, a deposit of fat, in the form of adipose tissue, is effected; when an excess of carbohydrates is fed, an elaboration of fat, with a resulting increase of adipose tissue, takes place.

Gelatin is a nitrogenous substance resembling albumin in its atomic arrangement, in its conversion into peptone by the gastric and pancreatic secretions, and in its final oxidation into urea. When gelatin is added to an albumin diet, it has an influence in lessening organic albumin and fat dissipation similar to that possessed by both fat and carbohydrates. It is of interest to note that while gelatin has a more pronounced effect in lessening organic albumin destruction than both fats and carbohydrates, in reducing the organic fat dissipation it is less effectual than either fat or carbohydrates. Despite the chemical resemblance of gelatin to albumin it can not replace that substance, nor are we acquainted with any substance which can substitute the minimum physiologic nutritive quantity of albumin necessary to an animal organism.

These then are, in brief, the primary fundamental principles by which we must be guided in nourishing individuals, both in health and in disease. These principles emphasize the fact that of the three chief nutrients—albumin, fat and carbohydrates, to which a fourth, gelatin, may be added—albumin is the substance which requires the foremost consideration in the selection of a diet. This is true because it can not be replaced by any other known nutrient, irrespective of whether it belongs to the nitrogenous or non-nitrogenous group of chemicals or foodstuffs.

These principles further teach us that one or preferably both of the non-nitrogenous food principles, carbohydrates and fats, *should be added to an albumin diet* for the maintenance of the healthy functions of the organism. To these two *non-nitrogenous* nutrients we may add gelatin, which, as we have seen, has an influence similar to that of both fat and carbohydrates.

Let us here consider the exact quantity in which each one of these nutrient principles must be contained in the daily diet, and the circumstances which determine a variation in the quantitative demands of the system upon these substances. The nutritive demands of the human organism, from the period of infancy to that of adolescence and from the latter to that of maturity and decline, are subject to varying *fluctuations*. Again, different degrees of bodily activity, both physical and psychical, during sleep and the *waking* state, thermic and climatic influences, body weight and size, and finally various *pathologic conditions, all make* definite nutritive demands upon the system. For instance, in infancy there is *more nutriment required*, estimated per kilogram body weight, than during the period of maturity; the body weight and size has an *influence*, as we have already pointed out, in so far that a smaller organism requires relatively more *nutriment than* a larger one; during sleep or absolute rest, compared with the waking state, the albumin *metabolism remains unchanged*, while the fat and carbohydrate consumption is reduced; bodily exercise is accompanied by an increased carbohydrate and fat consumption, while the albumin metabolism remains uninfluenced. *Heat and cold affect* the organism differently—increased body temperature raises the total carbohydrate and fat *consumption, while the reduction* of external temperature increases, and an increase of external temperature reduces, both the *fat and carbohydrate* metabolism.

Finally, *in pathologic conditions*, such as fever, dyspnea, anemia, diabetes, Bright's disease, icterus uric acid diathesis, etc., various *nutritive* abnormalities are discernible, and it behooves us at this point to determine the *normal nutritive mean of the* organism and its practical application to pathologic conditions. In this way we *shall be enabled to logically appreciate* the dietetic demands in pathologic conditions and estimate the applicability *of artificially digested foods to the dietary* of invalids. We indicated in our foregoing remarks *that the preferable diet for a normal individual is* one consisting of certain quantities of albumin, fat and *carbohydrates*.

Determined by methods which consisted in estimating the *nitrogen and carbon output in individuals subsisting* upon an ordinary indefinite diet, it was originally estimated that the average individual of 70 kilograms—154 pounds—body weight, at rest and during moderate and severe physical labor requires for every twenty-four hours, 100 to 140 grams of albumin, 50 to 100 grams of fat and 400 to 500 grams of carbohydrates. Practical observation has shown that some individuals subsist upon as little as 75 to 80 grams of albumin in twenty-four hours, and experimentally these figures can be materially reduced for a considerable length of time, as the writer showed in a series of experiments covering a period of 33 days.[3] In ordinary cases, however, unless prompted by some particular reason to materially reduce the albumin quantity, it will be preferable to adhere to the 90 to 100 grams of albumin ration for the average individual at rest or during light exercise. Figured in calories, the average individual requires during absolute rest from 30 to 34 calories per kilogram body weight, during light exercise 34 to 40, for a medium amount of work 40 to 45, and during severe labor 45 to 60 per kilogram body weight, for every twenty-four hours.

A diet consisting of 100 grams of albumin, 50 grams of fat and 400 grams of carbohydrates would equal: Albumin 100 grams $\times$ 4.1 $=$ 410 calories; fat 50 grams $\times$ 9.3 $=$ 465 calories; carbohydrates 400 grams $\times$ 4.1 $=$ 1640 calories—a total of 2515 calories. This number of calories represents a sufficient amount of heat or food, for an individual weighing about 74 kilograms, or 163 pounds, at rest. To further elucidate this method of estimation I append a diet list, which I used in a series of experiments made upon myself[2].

Materials.	Quantity	Albumin. (Nitrogen 6.25.)	Carbohydrates.	Fat.
Meat	75 grams	15.40	....	1.33
Rice	200 "	12.36	149.60	0.66
Potatoes	225 "	5.49	45.00	....
Bread	200 "	17.92	120.00	....

Materials.	Quantity	Albumin. (Nitrogen 6.25)	Carbohydrates.	Fat.
Starch	70 grams.	0.28	69.72	....
Eggs	50 "	6.27	....	6.05
Milk	150 "	5.60	7.39	6.75
Sugar	40 "	....	40.00	....
Butter	50 "	0.43	....	....
Beer	700 "	3.67	62.51	....
Tea	760 "	0.58	....	....
		67.80	494.22	60.49

Albumin 67.80 × 4.1 = 277.98 calories; carbohydrates 494.22 × 4.1 = 20.26 calories; fats 60.49 × 9.3 = 562.56 calories—a total of 2866.84 calories.

In the foregoing table the quantity of fat, albumin and carbohydrates is accurately accounted for as is also the total caloric value. The number of heat units, 50.22 per kilogram body weight, is greater than was really necessary, but I chose this number for the reason that I was reducing my albumin ration far below the usual quantity, as I determined by a great number of total nitrogen estimations while on an indefinte diet.

ARTIFICIALLY PREPARED OR PREDIGESTED FOODS.

This brings us then to the actual consideration of the subject of artificially digested foods, and their application to the diet of invalids.

Until 1843, when Graves published his observations upon the diet of fever patients, there existed a dictum in the practice of medicine, which read, that to successfully treat fever patients the diet must needs be reduced to a minimum quantity, and this was successfully accomplished by resorting to cereal water and various broths, which were practically destitute of nutritive value. Following the writings of Graves, in which it was urged that "fevers be fed," the observations of Chossat on the effect of inanition were published, and these two writings then, in conjunction with the experimental observations of Liebig, Voit, Pettenkofer, et al, acted as an incentive to the research upon which our present knowledge of invalid feeding is founded.

Although as early as 1752 Reaumer and Spallanzani discovered the digestive action of gastric juice, it was not until 1824 that Prout discovered the gastric hydrochloric acid, and 1850 that Lehman first applied the term of peptone to the products of albumin digestion. The diastatic action of saliva was not discovered until 1831, although Payen had discovered grain diastase thirty-six years previous to this time.

We have evidence that in ancient times grain water was added to milk to render it more easily digested, and other methods were resorted to in attempting to make food more acceptable to invalids, yet the first important attempt to produce artificially prepared foods was made subsequent to the discoveries which we summarized in the preceding pages. As in other matters pertaining to nutrition, Liebig was a pioneer in the department of artificially prepared foods. Liebig's efforts resulted in the production of these two foods which bear his name: 1, Liebig's extract of beef,[4] known, we dare say, to every civilized race; 2, Liebig's infant soup, which while it is remembered by but few to-day nevertheless deserves the distinction of being the preparation which has given rise to the almost countless numbers of so-called baby foods.

When one considers the havoc which many of these improperly prepared invalid and baby foods have occasioned and the misuse to which numerous really praiseworthy preparations have been subjected, the thought involuntarily arises as to whether it would not perhaps have been far better had the idea of artificially preparing foods for invalids and babies never occurred to any one. The subject of the feeding of artificially prepared foods is in the same deplorable condition as that of nutrition in general, but whereas ignorance and neglect of the subject of nutrition, as applied to feeding the average individual and using the term in a general sense, affects simply healthy or somewhat indisposed individuals, lack of proper knowledge to correctly adjust the administrations of artificially prepared foods affects both the helpless infant and the invalid, who really are in need of proper nourishment.

The medical world is justified in insisting that the manufacturer produce an artificially prepared food which answers the requirements of the nutritive demands of invalids. Further, the manufacturer should be compelled to print upon the package of each preparation of artificially prepared food an exact quantitative and qualitative analysis. This is a duty which the manufacturer owes to the medical world, and the duty which the latter owes to the manufacturer is that it sufficiently comprehend the principles of nutrition, thereby insuring the rational application of reliable preparations to the dietary of invalids. With these points observed it simply remains to be determined, in selecting an artificially prepared food, whether it be palatable to the patient and whether it possess the nutritive and therapeutic value required of it.

In selecting an artificially prepared food for an invalid, we are guided by the same principles of nutrition and metabolism as in feeding an individual in health. An invalid, like a healthy individual, requires a definite quantity each of albumin, fat and carbohydrates to furnish the necessary total caloric demand of the organism. We find a deviation from the above statement in certain pathologic conditions, in which it is necessary to reduce the quantity of one nutrient principle and substitute in its place another. I have reference to the reduction or entire withdrawal of carbohydrates in diabetes, the reduction of albumin in uric acid diathesis, etc. Irrespective of a reduction of particular food principles, the total caloric supply must remain unaltered or at least as little changed as is compatible with the condition of the patient. The dream of the medical profession, from the very dawn of the science of nutrition, has been to prepare an artificially digested food which would relieve the gastro-intestinal tract of its usual digestive labor, but, like the illusion of an elixir of everlasting youth, it has resulted only in idle and futile search.

With the newly acquired knowledge of some of the more pronounced phases of digestion, it is comprehensible why the trend of scientific aim should have led experimenters and clinicians in this direction. The artificial conversion of albumin, fat and carbohydrates into their respective end products has, it is true, been accomplished, but, despite this, the subject of the feeding of artificially digested foods is still far from being solved. While the artificial preparation and dietetic application of fats and carbohydrates have given fairly satisfactory results, the same can not be said of predigested albumin, since peptones and albumoses have proved to be stubborn and unyielding in the extreme.

It is not so many years ago that Voit, along with Bruecke and other celebrated physiologists, supported the old view of Tiedeman and Gmelin, according to which peptone was considered to be a decomposition product and one that could not be regenerated into albumin. It was thought that the peptone resulting from the digestion of albumin in the gastro-intestinal tract was absorbed by the circulation as such, and was oxidized in the system in a similar manner to carbohydrates and fats, while the albumin necessary to rebuild the wasted tissues of the organism was thought to be dependent upon the absorption of unaltered albumin from the gastro-intestinal tract. Lehman, on the other hand, contended that the conversion of albumin into peptone was a definite physiologic process, which served the purpose of rendering the latter more easily absorbed, to again be converted into albumin in the circulation. The great authority of Bruecke, however, had its influence, and as late as 1877 peptone was looked upon as being a product of decomposition. Further exact experimental research has indeed proved that many albumins, such as serum albumin, egg albumin, acid albumin and globulin, may reach the circulation without first undergoing peptonization, but it has also been demonstrated that the end products of albumin digestion, instead of being products of decomposition, are reconverted into albumin in the mucous membrane of the gastro-intestinal tract to circulate as such in the system, which fact definitely disposes of the older contention of Voit, Bruecke and others. Two or three years previous to this period the first peptone feeding experiments were instituted, and, while the results of several experimenters made it appear very probable that peptone, so-called, did possess nutritive worth, the proof was not sufficiently conclusive to prevent Voit, as late as 1881, from offering experimental data in support of his earlier contention. Up to this time peptone was considered a simple or elementary compound, but the famous investigations of Kuehne and Chittenden and other of his pupils proved that peptone was really a mixture of many different substances and that the so-called peptone—preparations of manufacturers—consisted principally of albumoses, bodies intermediate between albumin and true peptone.

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[4] Proust as early as 1821 produced meat extract, but the credit of the practical manufacturer of it really belongs to Liebig.

Several experiments instituted with albumoses and pure peptone apparently proved that the former could serve as a substitute for albumin, while peptone usually acted as a violent irritant, causing vomition and diarrhea. Following these preliminary observations it was then finally proved that a number of preparations, consisting chiefly of albumoses, together with varying quantities of true peptone and insoluble albumin, could be substituted for the ordinary unaltered albumin, such as is contained in the daily food ration. Still more convincing and decisive are the experiments made with pure albumoses, which prove that their nutritive worth is equivalent to unaltered albumin, while anti-peptone, resulting from pancreas digestion at least, seems to be destitute of this power of substitution.

With this problem of the nutritive role of peptone and albumoses fairly well decided, the question arises whether artificially digested albumin is really applicable to the diet of invalids. We have seen that true peptones have not given satisfactory results as dietetic reagents, and, if we bear in mind the comparatively recent discovery that true peptones are formed only in very small quantities in the stomach and that albumoses very likely represent the digestive products which enter the circulation, it becomes evident why concentrated quantities of peptone disagree with patients in the manner noted above. Dismissing, therefore, the idea of utilizing pure peptone as a dietetic agent, and recognizing the clinical and experimental evidence of the nutritive worth of albumoses, we must further ask ourselves what advantage we hope to obtain and what effect we really produce by the feeding of artificially digested albumin. To begin with, most of these preparations have rather a disagreeable taste, which is a disadvantage in a food, making the addition of either meat extract or some other taste-disguising agent necessary. Further, contrary to the general belief, predigested albumin does not possess a higher nutritive worth than ordinary native albumin.

A claim which is often emphasized by manufacturers and accepted by many as being true, is that artificially digested albumin is more easily absorbed than native albumin. But here also abundant experimental and clinical data disprove these claims. The worth of an artificially digested food like that of an ordinary foodstuff is estimated by the manner and degree in which it is utilized in the gastro-intestinal tract.

Let us begin with the stomach. We are in possession of data which prove that the rate of peptone absorption from the stomach is extremely slow and considerably slower than either alcohol or the different forms of sugar. Further, it has been shown that a solution of artificially digested albumin is not absorbed more rapidly from the stomach than a nutritive equivalent of powdered meat measured in calories. The absorptive maximum of the stomach, as one would expect, bears a relation to its degree of digestive activity, and, beyond this degree, the absorption can not be forced. In regard to the intestinal absorption of artificially digested albumin, our experience is as unsatisfactory as in regard to the gastric absorption. Ellinger, for instance, has shown in some comparative tests with meat and somatose that, when each was separately given in quantities representing 8.92 grams of nitrogen, with meat the excreta contained but one gram of nitrogen, while with somatose they contained 10.6 grams of nitrogen. By still another method, that of estimating the degree of intestinal decomposition as expressed by the urinary sulphuric acids, it has been shown that somatose, a representative artificial albumin product, possesses no advantage as a nutrient over native albumin.

It will be seen, therefore, that the supposition that peptones and albumoses are more readily and more perfectly utilized than native albumin does not bear the test of careful investigation. Closely linked to this idea is the supposition that predigested albumin taxes the digestive functions less severely than unaltered albumin. This, like the other statements, is erroneous, for it is clear that the expenditure of energy lies in the secretion of the digestive fluid, not in the digestion of food after the digestive fluid has been secreted.

One might be led to contend that artificially digested albumin does not excite the glandular activity to the same degree as does native albumin. But here again we are confronted with investigations which show that the gastric acid secretions, as determined by exact chemical analysis, may be as great as and even much greater in the case of albumoses and peptones than in the case of unaltered or native albumin.

The second pronounced expenditure of energy of the digestive organs, that of motility, by which food is propelled onward from the stomach into the intestines, is as great, as we have already seen, in the case of predigested as in the case of native albumin. In particular pathologic conditions of the gastro-intestinal tract the results of the application of artificially digested albumin are not materially different from those which have been already mentioned. If we group the distinctive chemical features of the stomach cases, we find that in one class we may have an absolute absence of acid, and in another class a normal or excessive quantity of acid. Between these two extremes we find cases with varying degrees of acidity, which we need not here define more particularly. In addition to the acidity of the stomach, the motility is of the greatest importance, for it is this muscular mechanism which determines the onward propulsion of food from the stomach into the intestines. Irrespective of the acid condition of the stomach the motility may be abnormally accelerated, slowed or entirely inhibited. It is clear that in cases of absolute cessation of motility, resulting, for instance, from a dilatation, dislocation or a pyloric stenosis, it is as useless to introduce artificially digested albumin into the stomach as it is to resort to native albumin. So also, when the motility and acidity are normal it is unnecessary to resort to artificially digested albumin. Even when the hydrochloric acid and peptone digestion is much reduced, or entirely absent, as in acute and chronic fevers, true gastritis, etc., the unaltered albumins may be perfectly utilized, as is clinically seen every day, and which both the clinical and experimental cases of total gastric extirpation have conclusively proved. It may be remarked, however, that certain particularly selected cases of an acidity with normal motility do not offer any direct objection to the use of artificially digested albumin, provided it does not prove too irritating to the gastro-intestinal canal.

Large quantities of many of the artificially digested albumins usually act as a laxative, and it is this action which recommends its moderate use in some cases or absolutely condemns its use in others. The great majority of artificially digested albumins are to be looked upon as gastro-intestinal stimulants, rather than nutrients which can be substituted for the maximum requisite quantity of albumin for any great period of time. Peptones and albumoses may be temporarily employed alone or as adjuncts to other foods in cases where there exists either a repugnance to ordinary food, where the mastication of food is difficult or impossible, or where there exists an incomplete mechanical obstruction in the esophagus, and where it is necessary to relieve the stomach entirely from mechanical irritation. In gastric ulcer, hyperacidity and in all cases where an over-production of the gastric secretion and hydrochloric acid is to be avoided, irrespective of the condition of motility, the artificial albumin preparations are not to be used. The other contraindications have already been referred to and need not be gone over again.

The subject of the feeding of artificially prepared fats and carbohydrates, while not exactly identical with that of predigested albumin, is nevertheless very similar to it, and many of the difficulties encountered in connection with the predigested albumins are also common to both the carbohydrates and fats. Various attempts have been made to increase the ordinary rate of fat absorption by mixing it with foodstuffs and chemicals and by emulsifying it in various ways. It has been found, however, that when the motility of the stomach is unimpaired and the pancreatic and biliary secretions are normal, the absorption of unaltered, native fat, such as is contained in milk, cream, eggs, butter, etc. is very satisfactory indeed. It has been shown that as high as 300 grams (about 10 ounces) of fat, representing 2790 calories, may be absorbed from the intestinal canal in twenty-four hours.

Practically no progress has been made in the direction of fat alimentation and this subject is now generally looked upon as belonging to impenetrable territory. However unpromising as the present outlook may appear for an advance in this problem, especially in conditions of general marasmus and in hepatic and pancreatic difficulties, the future may, nevertheless, offer a means for the eventual solution of the difficulty.

The logical, artificial conversion of starch into sugar for specific, dietetic purposes dates from the time when Liebig first prepared his infant's soup, although the empirical dextrinization and saccharification of starch has been practiced from time immemorial. When native starch is introduced into the mouth it undergoes a chemical conversion into maltose. Usually, however, this conversion is not completed until it reaches the stomach, and not even then if the contents of the stomach are decidedly acid. In the latter case the conversion is not completed until it reaches the small intestine. To insure the complete conversion of unaltered starch into sugar and the absorption of the latter into the circulation, it is necessary to prepare it in a very finely powdered form. Various preparations in which this precaution has been taken are to be found on the market and give very satisfactory results. The starch contained in these preparations may either be converted into dextrin by heat during their special preparation for the invalid, or into maltose by some particular malt solution or diastase. Investigation shows that from 500 to 700 grams of unaltered starch, representing 2050-2870 calories, may be almost completely converted into sugar and absorbed by the gastro-intestinal canal in twenty-four hours.

In infants in whom, as is now generally recognized, the diastatic functions of the salivary and pancreatic glands are but imperfectly developed, it is necessary to first convert the starch into dextrin and maltose, or preferably entirely into maltose in cases where it is thought advisable to feed with artificially digested foods of this variety. In adults good results are obtained from these foods in various salivary, gastric and intestinal disturbances in which unaltered starch is not properly utilized in the organism. Both dextrin and sugar are absorbed by the stomach as well as by the intestines, and, as one would expect, the diffusibility and absorptive rate of sugar is considerably greater than that of dextrin.

Just as in the case of the ingestion of predigested albumin, much depends upon the motility and absorptive condition of the stomach as to whether or not the converted starch or native sugar is properly utilized. Large quantities of converted starch or native albumin induce very decided gastro-intestinal irritation with fermentation and diarrhea. Although the ingestion of enormous quantities of starch never induces in the healthy individual an appearance of sugar in the urine, quantities of dextrose ranging from 100 to 250 grams are sufficient to induce a decided transient glycosuria. In the rational application, however, of dietetic preparations containing native sugar or converted starch, this undesirable effect is hardly to be feared. I simply wish to emphasize these circumstances to show the physiologic limitations of forced carbohydrate alimentation.

At times cases may arise in which it is desirable to substitute honey, cane sugar, milk sugar, glucose or fruit sugar for either native or predigested starch, and, when properly selected and carefully applied, these aid very materially in increasing the total caloric value of the diet of the invalid. To this class we may add the various malt preparations, which, in connection with their diastatic properties, possess a certain nutritive value.

On the whole, artificially prepared starches given alone or mixed with specially prepared milk foods have given good results in my hands. They offer a convenient form in which to exhibit this class of dietetic preparations, and, as a change from the various other foodstuffs, are generally very much relished by patients.

It is not my object, nor would it here be in place, to attempt a criticism on the value of these and other especially prepared foods in infant feeding. When used with judgment and discretion they undoubtedly often render valuable service; when they are indiscriminately prescribed, however, they give correspondingly bad results. From all this it will be seen with what difficulty every attempt is beset which strives to lessen the labor of the gastro-intestinal canal by the exhibition of artificially digested foods.

Unfavorable as this criticism may appear to the subject of artificially prepared albumins, I trust that it will not be construed as being intended as a reflection upon the efforts of manufacturers of artificially prepared foods. There are many who are honestly and sincerely interested in the production of a superior dietetic preparation and to them this is offered as a friendly criticism, which I hope may act as a stimulus to further efforts to produce a perfect artificially digested food—one free from the untoward secondary actions we have discussed. Much remains to be said on this subject, and it might have been of interest to have included a careful analysis of every class of artificially prepared foods in our discussion. Lack of time and space did not, however, admit of this, and I dwelt upon the albumins particularly, for the reason that they are so difficult of application and so universally misunderstood.

THE SOMATIC SIGNS OF BRAIN SYPHILIS.*

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This paper takes no cognizance of inherited syphilis or of the degenerative diseases in some way caused by specific infection, but is limited to the signs of histologically definable specific invasion of the brain.

Before entering upon the details of my subject, I beg indulgence while I enunciate half a dozen postulates relating to the clinical history and more general symptomatology of cerebral lues, which seem to me so important as to be inevitable as a preface.

1. Brain syphilis is most frequent in the first year after infection, next most frequent in the second year, less frequent in the third year and so on, about 50 per cent. of all cases occurring within three years after the primary sore. After ten years of quiescence, therefore, the appearance of cerebral syphilis is exceptional.

2. In reaching a diagnosis of a brain case, absence of a history of specific infection should have no weight in the case of women, and in the case of men relatively slight importance.

3. Syphilis of the brain is not synonymous with gumma. I do not know how the myth became current in the profession, but the average practitioner works in the obscurity of the tenet that brain syphilis means gumma and is utterly oblivious of the fact that this is the least frequent form of cerebral specific lesion.

4. Most frequently brain syphilis means syphilitic arteritis. Next in frequence come syphilitic meningitis and syphilitic infiltration of the cranial nerves, while a gumma comparable to a brain tumor is least frequent.[1]

5. Paralysis from brain syphilis (excluding paralysis of the cranial nerves) is most frequently caused neither by the pressure of a gumma nor by hemorrhage, but by thrombosis due to syphilitic arteritis.

6. Consequently, many cases of syphilitic paralysis are no more amenable to treatment than are those of cerebral thrombosis due to ordinary arteriosclerosis and atheroma (influence of age excepted), which means that the important symptomatology is that which precedes and presages paralysis, because it is at such time that prompt treatment obtains brilliant, almost miraculous, results.

7. Syphilis is never a "system disease." As the Anglican sage, Sir William Gowers, puts it: "As a general rule, if we find certain structures of common function selected for isolated impairment from among others of different function, we may be sure that we have not to deal with a true specific process."

In what follows mention is made only of those symptoms deemed by the writer to be most important by reason of their frequence or diagnostic importance or because, having been overlooked or forgotten by the average practitioner, they need to be called to his attention. No categorical enumeration of symptoms is possible in compass less than a brochure and a concise grouping of them is impracticable because the only systematic thing in the symptomatology of brain syphilis is the utter want of system, which suggests the first trait.

1. *Lack of Type.*—So strikingly consistent is brain syphilis in the production of apparent inconsistencies, that any brain case having an odd mixture of psychic and somatic disorder, a sequence of signs illogical as regards either time or localization, or a bizarre appearance, disappearance, reappearance, amelioration and aggravation of symptoms, should at once awaken suspicion of lues. For cerebral syphilis nothing is impossible. Insomnia, somnolence or an alternation of them; pain without anesthesia, anesthesia without pain or painful anesthesia; spasm without paralysis, paralysis without spasm or the two combined; monoplegia, paraplegia, hemiplegia, crossed paralysis, single or multiple cranial nerve paralysis, and any imaginable grouping of them; focal signs rivaling in neatness the most dexterous work of experimental pathology or a hodge-podge of symptoms carrying only confusion to the brain anatomist and physiologist; half-way manifestations, scarcely inflammatory, more than neoplastic; these are a few of the tricks of specific lesions within the cranium. A few years ago, when the London police found the remains of a mysterious murder, the body showing inexplicable mutilations, they said "Jack the Ripper." When the neurologist meets a brain case comformable to no rule, abounding in inconsistencies, ignoring anatomy, a clinical outlaw, he is very apt to say "brain syphilis."[2]

2. *Headache.*—In about 75 per cent. of all cases of cerebral syphilis headache is present. Notoriously nocturnal in its exacerbations, it may be vesperal, or even

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* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Nervous and Mental Diseases, and approved for publication by the Executive Committee: Drs. Frederick Peterson, Hugh T. Patrick and H. A. Tomlinson.

[1] The foregoing is not to be understood as an attempt to controvert the fact that nearly all syphilitic lesions are histologically almost identical, i. e., granulomata—cellular accumulations—but merely as a protest against the baseless popular impression that brain syphilis simply means syphilitic tumor of the brain, and that the symptomatology of brain syphilis is simply the symptomatology of brain tumor.

[2] The only organic disease which can compete with syphilis in polymorphism, fluctuation and melange of types is multiple sclerosis.

diurnal and allow the patient to sleep all night. It is usually severe. The location is unimportant. In the beginning, although the lesion is constant, the headache is not; it may remain away for days or even weeks at a time and thus be mistaken for migraine or for malarial, infectious or stomachic cephalalgia. As the case advances, however, it becomes more continuous and may finally keep the patient in agony day and night. If occipital, the pain not infrequently radiates down one or both arms, even to the fingers, and may be accompanied by rigidity of the neck. Most frequently, but not always by any means, some part of the head is tender to percussion or pressure.

3. *Transient Attacks.*—These include every sort of fit, from the slightest to the most severe. They may be: 1. Attacks of dizziness, trifling or tumultuous. 2. Attacks scarcely to be distinguished from syncope. 3. Momentary losses of consciousness, exactly like petit mal. 4. Localized numbness or tingling—one side of face, one hand, etc. 5. Spasms, from the most trivial and restricted twitching to generalized violent convulsions. Typical Jacksonian fits are far from rare. Oppenheim says that the convulsions of syphilis are distinguished by their violence and frequency. My own experience is that while they are apt to be frequent and at times prolonged, the spasm is more often slight, not violent.

Some of these fits are apoplectoid rather than epileptoid. The patient suddenly has a seizure, with or without loss of consciousness, with or without spasm, but attended with loss of power more or less marked, more or less transient. Later, of course, such an attack may be more grave and the paralysis permanent. Epilepsy or apoplexy between 20 and 40 should always awaken suspicion of specific disease.

4. *Cranial Nerve Paralysis.*—Frequent, striking, imperative in their indications are palsies of the various cranial nerves, and of these oftener involved than any others are those pertaining to the eye. I need only mention that Alexander's statistics showed 72 per cent. of unilateral paralyses of the third nerve to be due to syphilis, and Uhtoff concludes from his observations that only 15 per cent. of all cases of cerebral lues are without eye symptoms. I should say that, in the absence of traumatism, at least 90 per cent. of all cases of ocular paralysis in adults are caused by brain syphilis, locomotor ataxia, general paresis, and brain tumor, and of these by far the most frequent causes are locomotor ataxia and syphilis—diseases that may usually be distinguished at a glance. Of primary optic atrophies more than 90 per cent. are certainly due to tabes, syphilis and general paresis. Tabes causes the most. Choked disc and optic neuritis may be mentioned here. They are not so very frequent. When present they are almost pathognomonic of intracranial organic disease, but serve in no way to distinguish luetic from other changes.

In this connection, too, I may speak of disturbances of the visual field. The long course of the visual tracts, almost from pole to pole of the brain, makes them liable to injury by lesions of various location and, besides, the exposed position of the optic nerves and optic tracts at the base causes them to be involved with frequency. Currently, the visual field is examined far too infrequently. Alterations in the field may be quite unknown to or erroneously interpreted by the patient and thus escape knowledge of the physician unless systematically looked for. Besides affording indubitable evidence of organic disease they may, alone or in conection with other signs make the localization easy.

All of these ocular signs are apt to have the inconsiderate disregard for anatomical facts and established types before spoken of. There is no necessary correspondence of pathological findings to clinical picture. The whole third nerve may be embedded in a gummatous meningitis and yet only part of the fibers suffer, while complete paralysis in all its branches may depend upon almost undiscoverable changes. Unaccountable alterations in the visual field, blindness without changes in the fundus, appearance and disappearance of symptoms so sudden as to suggest only functional disease are some of the many manifestations showing the capricious character of brain syphilis.

Less frequently than the ocular nerves, but still quite often, are the fifth and seventh attacked, and with the latter the auditory is very apt to be involved. The first sign of involvement of the fifth is paresthesia or pain in the distribution of one of its branches. As the disease progresses these irritation symptoms spread to other branches. With the pain, maybe shortly preceding or following it, comes impairment of the tactile sense, the patient then presenting anesthesia dolorosa—a complex almost invariably due to organic disease of the nerve trunk. The fifth is affected on one side only. Paralysis of the seventh is, of course, of the peripheral type, and may affect both nerves, either alternately or simultaneously, although unilateral trouble is the rule. Lesion of the auditory, causing tinnitus, deafness, aural vertigo, or all three, is rare without implication of the facial as well.

Cranial nerves below the eighth are affected with less frequency, but none are exempt. Dysphagia, partial paralysis of the tongue, alteration in the pulse rate, laryngeal paresis, partial paralysis of the sterno-mastoid and trapezius muscles and cerebellar symptoms, alone or in combination, are produced when syphilis invades the posterior fossa of the skull. In case the basilar artery and its branches bear the brunt of the attack, materially interfering with the bulbar and pontine circulation, the grouping of cranial nerve signs will be that of bulbar paralysis—the glossolabio-laryngeal complex.

Before leaving the subject of cranial nerves, I can not refrain from again calling attention to the extreme irregularity of the voicings of syphilis and to the value of this lack of system as a diagnostic pointer. While cerebral lues may affect the cranial nerves as would any basilar disease, invading those close together and causing gradually increasing symptoms as the disease progresses, it more frequently acts in a more erratic way. One nerve on one side and quite a different nerve on the other; one anterior and one posterior nerve on the same side; paralysis of one nerve, disappearance of this paralysis and then paralysis of another, nearby or at a distance; paralysis of some fibers of one nerve and then serious involvement of another without the first growing any worse; these are some characteristic vagaries.

5. *Addition of Spinal-Cord Symptoms.*—This is perhaps as good a place as any to speak of the complications of cerebral with spinal syphilis. While it savors of Erin to speak of spinal symptoms as part of the signs of brain disease, it is a fact that syphilitic disease of the cerebral meninges does often spread to the spinal membranes. When, therefore, to the characteristic signs of cerebral disease are added symptoms pointing to disease of the cord or its membranes, the diagnostician is materially aided in coming to a conclusion.

6. *Impending or Accomplished Thrombosis.*—As be-

fore stated, arteritis or arterial cellular infiltration is the most frequent form of brain syphilis. Syphilitic meningitis must inevitably compromise arteries and veins and even a gumma may disclose itself principally by the invasion of adjacent vessels. Obviously, then, many of the signs of cerebral lues will be those caused by local abnormalities of circulation, and they resolve themselves almost entirely into the signs of impeded circulation and arterial occlusion. Most of these signs have already been mentioned, but it seems advisable to review them from the standpoint of arterial lesions. Indeed, it is well to frequently remind ourselves that although the symptoms of cerebral syphilis are due entirely to injury of nerve cells and fibers, the disease is not primarily one of the nerve elements at all, but of extra-neural tissues—arteries, veins, membranes, nerve sheaths. To involvement of arteries at the base of the brain, Heubner attributed most of the intellectual and mental symptoms of brain syphilis; a great many of the early and late somatic signs are directly attributable to partial or complete occlusion of arteries. Among the earlier, besides headache, are transient attacks of dizziness, of numbness of one hand, one foot, one side of the face or tongue; transient aphasia or paraphasia, alalia or dysphagia; temporary diplopia, ptosis, or dilatation of one pupil; sudden weakness of one hand or leg, or partial hemiplegia which rapidly disappears; localized clonic spasm or twitching —all of the foregoing without loss of consciousness. As the disease is never confined to one arterial twig and very often affects the nutrient vessels of parts differing widely in function, these early, so-called premonitory signs may present peculiar associations. Dilatation of one pupil and paresthesia of a hand, numbness of the left face and clumsiness of the right hand, partial aphasia and slight dysphagia, diplopia and weakness of one leg, may be noted as illustrations.

Then there may be a general neurasthenic and myasthenic condition with insomnia or moderate somnolence without focal signs. Later come more pronounced symptoms; the dizzy spells become brief losses of consciousness, the pareses are less transient and disorders of speech more enduring. It is only one step more to a grave apoplectic attack from thrombosis of a considerable artery. If the vessel belong to the cortical circulation and be not too large, such an attack may be rapidly recovered from, but if such considerable vessel supplies the basal ganglia or cranial nuclei, the disability is permanent, and if the artery be a very large one of any part the result is permanent disability or death. As in thrombosis from lesions other than specific, a complete hemiplegia may occur without loss of consciousness, or with only moderate confusion or somnolence. This is not true of hemorrhage. In many cases the hemiplegia comes on in such a way as to clearly indicate either temporary arrest of circulation or partial occlusion of an artery followed by its complete closure or, what I believe to be more frequent, thrombosis of a small branch followed by occlusion of adjoining branches or of the main artery by extension of the intra-arterial clot. Such a course of intracranial proceedings is evidenced by restricted or very slight paralysis, followed in some hours or days by more extended or complete disability.

I believe that largely to arterial invasion is to be attributed another of the frequently observed features of brain syphilis, viz., progress by separate steps or increments. Without appropriate treatment, cerebral syphilis progresses more or less rapidly for the worse, but never uniformly, always by fits and starts, often with intercurrent improvement. Not rarely these increments affect different parts. A small artery becomes so badly damaged that circulation in it is stopped. Before a second calamity takes place in that immediate vicinity, another arterial twig at some distance suddenly goes out of commission, adding one more sign to the clinical picture, while that caused by the first stoppage may be improving.

Of material assistance in some of the earlier cases are increase of the deep reflexes and incoördination. The patient may make complaints such as indicate merely functional disease and the physician may detect neither anesthesia nor motor impairment, but careful examination may show increased deep reflexes on one side, as compared with the other, or slight incoördination in finer movements.

7. *Peculiar Stupor.*—While not wishing to trench upon the topic of Dr. Dewey, which none can handle so well as he, I would slight my own subject were I not to mention the somnolent, semi-stuporous condition which occurs more frequently in cerebral lues than in any other brain disease. Combined with one or more of the foregoing somatic signs it is well-nigh pathognomonic and even alone is strongly suggestive. In this condition the patient seems to be almost comatose, but can be roused and when once awake is practically rational, although he may be decidedly irritable, not to say bellicose. The condition was long ago likened to a drunken state; after being roused and responding to enquiries, the patient at once lapses into his previous stupor. Without fever and preceded by or combined with severe headache, the symptom means grave organic brain disease, in numerous instances, syphilis.

8. *Fever.*—Cerebral syphilis may be considered to be an afebrile disease. Fever is exceptional unless pons or medulla oblongata be involved, when rise of temperature may be slight or considerable. In some cases the fever has seemed to me to be caused by bad condition of the gastro-intestinal tract and absorption therefrom.

9. *Vomiting.*—This occurs in many cases, more frequently when the posterior fossa is invaded and when a large gumma or extensive meningitis is present. Such emesis, although of cerebral causation, may take place only when the stomach is full and may be determined more by one sort of food than another. Nor should it be forgotten that cerebral vomiting is not necessarily projectile.

10. *Polydipsia, polyuria* and *polyphagia* are not unusual results of brain syphilis, the last being the least frequent.

11. *Insomnia* is not rare, aside from the inability to sleep on account of headache, and besides vertiginous attacks, constant dizziness may be present.

THE PSYCHOSIS IN CEREBRAL SYPHILIS.*

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When I came recently to consider attentively the subject assigned me in this discussion, I was so doubtful as to the production of anything of value that I asked the chairman to excuse me, but as both the present chairman and the chairman of last year renewed their request, I have complied with their wishes as well as possible.

When one attempts to lay down the lines upon which the subject should be treated, several questions arise which require to be first taken into consideration. One is the evidence of syphilis. Another, the very frequent existence in these cases of causes other than syphilis which have their share in determining the mental state—such as alcoholism; senile changes; arterial disease; kidney and heart disease and tumors, of non-specific origin.

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If the rule were made and followed of first catching your specific lesion and then excluding alcoholism and non-specific vascular changes, etc., a portion of the foundation for much writing on this subject would crumble away. On the other hand, syphilis is not and can not be excluded, even when neither history of it nor somatic signs are attainable. Fournier states that syphilitic disease of the nervous system is found more frequently than are the external signs of syphilis. Berkely attributes to syphilis all cases under 40 of hemiplegia or monoplegia and mental disturbance, where cardiac and renal disease were not found; also obscure dementias between the years of 25 and 40. This method of reaching a diagnosis must have an element of uncertainty, though doubtless in a general way the deductions are correct. There are probably as many cases in which syphilis is concealed or remains undiscovered as there are incorrectly diagnosed, but striking a balance by this method is not satisfactory for our present purpose.

It would seem that the reasoning adopted in many cases was something like this: "Here is a case of organic brain disease, coarse or fine, paresis, hemiplegia, monoplegia, suspected tumor or vascular lesion. It is antecedentally and consequentially probable the patient has had syphilis; therefore this is cerebral syphilis." Then the mental manifestations are sometimes taken up and treated as due to syphilis without positive evidence either before death or postmortem, and perhaps without considering whether the same mental states are not closely paralleled by cases certainly non-specific, or whether the findings may not be due to general and not specific causes, even though syphilis be present.

One instance of syphilitic psychosis that may be mentioned here is the mental state found in syphilitic tumor of the brain; but can any one distinguish between the psychopathic effects of a specific and a non-specific tumor? Again, how are the arterial disease due to syphilis and that due to other causes to be differentiated in their mental phenomena? Consider in the same way the effects of edema and intra-cranial pressure, with interruption or irritation of tangential tracts; also those of the various toxins. These morbific agents must destroy or derange the "cytopsyche" and the "histopsyche," assumed by some German writers to preside over the cell and tissue life (and I believe countenanced even by Haeckel); but the relation, if any, between the unconscious soul ascribed to the units of structure and the conscious soul that has for its instrument the entire brain, is something as yet beyond scrutiny. The cœnesthetic sense which is essential to soundness of mind is impaired in all psychoses. The association tracts belonging to the various brain centers are interrupted by syphilitic connective tissue overgrowth, or by poison or malnutrition, from primary degeneration of neurons, but how does this differ from the disease or destruction of association tracts from other brain changes, or from neuron degeneration from other poisons?

Berkely[1] in his recent work states: "Lues never directly affects nervous tissues." Moebius, as quoted by Bannister,[2] treating paresis as a syphilitic toxin disease, asserts: "There is only one kind of general paralysis and only those have it who have previously had syphilis." Is general paralysis a psychosis of syphilis simply? If so, we have at least one syphilitic form of insanity, but Moebius' claim is by no means fully substantiated. Probably as many pathologists would be found to deny as there are to affirm that tabes and general paralysis are exclusively syphilitic in their origin. Assuming that these diseases may be due to other causes than syphilis, can any one draw a clinical picture of these diseases when caused and when not caused by syphilis? It seems to me that if no one can distinguish between specific and non-specific paresis or tabes, where the pathology is comparatively well defined, it is all the more impossible to define the part syphilis may play in the forms of mental malady where the pathogenesis is more obscure. Consider further, syphilitic hypochondriasis, so-called "syphiliophobia," and insanity occurring with the very onset of constitutional syphilis. In all such cases lowered brain nutrition, perhaps purely functional, is capable of accounting for the conditions, and it is not necessary to call in syphilis to explain them. High authorities affirm and deny that soft chancre or suppurating buboes are followed by constitutional syphilis. The views of Fournier—as good an authority as any—have changed from one extreme to another, and of late a new perplexity is introduced by affirming that hereditary syphilis plays an important part in the development of psychoses, especially in the adolescent period. Here again an obstacle to the full understanding of the case arises, because the proof of hereditary syphilis is not always convincing, since dementia, praecox, paranoia, and hebephrenia have not as yet been studied so that those of specific and non-specific origin can be differentiated, neither are writers agreed as to the adolescent form of paresis.

In a recent paper by A. W. Hurd[3] it is stated that syphilis may cause, 1, any simple psychosis; 2, paresis; 3. pseudo-paresis. By a simple psychosis I take it is meant one which has nothing characteristic of syphilis. Paresis is the same thing, whether caused by syphilis or not. Finally, in "pseudo-paresis" it is claimed to be characteristic to find a confused mental picture, as of paresis "toned down," or cerebral syphilis "heightened"; to find that motor disorders or cranial nerve symptoms precede; that hypochondria or acute delirium may appear early; that paralysis rather than ataxia plays the leading rôle; that mental dulness and a "vacant expression" are more noticeable, while we find that a gradual change in disposition, grandiose ideas and a sense of well-being are more marked in paresis. It is noted that motor symptoms, cranial nerve symptoms and ataxia are utilized to aid in diagnosis, but these I am not able to take into account in treating of purely mental phenomena, as my subject requires.

In a paper by J. H. McBride,[4] read in this Section one year ago, it is stated: "Syphilitic insanity may mimic every known form of mental derangement;" he also says that there is "nothing characteristic in the mania" or the depression due to syphilis, but that, if the entire history be considered, irregular features will be found; that in mania there will be the earlier appearance of confusion or weakness, with intervals of quiet and semi-lucidity; in melancholia, brief depression, much confusion, outbursts of excitement, periods of stupor and early dementia. "These," he says, "may be regarded often as circumstantial evidence of a specific origin." The writer also mentions "loss of mental power, of self-control, of the self-regarding virtues, of moral sense, the detachment of life from the delusions," and many other morbid mental phenomena as "prominent characteristics." There is scarcely one of these phenomena or any combination of them which may not appear in an equally irregular manner in cases where there is no question of syphilis. A "confused mental picture," a "toning down" or "heightening" of various symptoms, an irregularity in the order they assume, predominance of paralysis or of ataxia or of cranial nerve symptoms, "hypochondria," "acute delirium," "vacant expression," etc., are symptoms that purely non-specific psychoses or those arising from alcoholism or non-specific arterial changes may present. So with the peculiarity of seeming to mimic other forms of insanity; and of irregular and atypical features or succession of symptoms.

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[1] H. J. Berkely: "Mental Disease," p. 210.

[2] H. M. Bannister: General Paralysis a Toxin Disease, Am. Jour. Insanity, vol. 1, p. 477.

[3] "Paresis and Cerebral Syphilis," Buffalo Medical Journal, April, 1901, p. 631.

[4] Mental Symptoms of Cerebral Syphilis. The Journal A. M. A., Feb. 2, 1901, p. 297.

The arguments in favor of syphilis from the "bizarre" and irregular character can have but small weight since "bizarrerie" is something we constantly see in cases where the question of syphilis is known not to enter, and certainly "loss of mental power" or of "moral sense" and of "the self-regarding virtues" have in them nothing that would aid in the diagnosis of a syphilitic psychosis.

If these two able observers find nothing in the mental phenomena more distinctive, one is inclined to think that it is because there is possibly nothing that is distinctive.

The tendency to "remissions" and to periods of return to apparent sanity does seem to mark syphilitic cases especially, though also known in those that are not syphilitic. In this matter again there is a difference of opinion as to whether the return to sanity is complete. Some writers, and among them Mott, claim that a certain dementia or weakening always remains; but I have known of cases where the return to normal condition was so complete that no expert could tell the difference, and such are reported by others. Mott explains these fluctuations by the fact that when the remissions occur, the disease is external to the nerve cell and functional in its nature.

It is doubtless true that the permanency of insanity and the failure to recover in simple acquired psychoses, may be due to the complication of syphilis, either hereditary or acquired. Some writers have given failure to recover as an indication or presumption of syphilis, but this fact itself helps not at all in the diagnosis of syphilis. Failure to recover is unhappily too frequent in all forms of insanity.

A correspondence may exist between the difference and variable nature of psychic symptoms and the irregularity of the pathologic changes of syphilis—so largely vascular in their origin. The irregular and temporary attacks of aphasia are somewhat characteristic, but are also found in other cases.

Some writers who claim lacunæ in the memory as characteristic, fail to note that lapses and gaps of memory are common in other forms, particularly alcoholic and epileptic forms, and yet these latter will be apt to be associated with acute attacks or other accompanying signs. It is perhaps questionable whether systematized delusions are ever found in syphilitic brain disease, unless there be a background of paranoia or degeneracy.

It is agreed that the anterior portions of the brain, frontal and central, are more open to syphilitic infection and this gives some characteristic significance to the frequent dulness and stupor. Again, the admitted correspondence between senility and syphilitic insanity speaks only for lack of characteristic features. Spitzka[5] gives the figures of Snell, who found that 75 per cent. of the cases of paretic dementia were due to syphilis; of Erb, who found a similar proportion of cases of tabes due to syphilis; of Mendel, who found 117 out of 291 such patients were syphilitic, while on the other hand Ripping found only 12 per cent. with a syphilitic history. Spitzka himself found syphilis in 33 per cent. of the pauper insane of New York. Clouston, in over 3000 cases, found but 16 of syphilitic insanity. Spitzka remarks that the attempt to test the question of syphilis by specific treatment fails, because in several cases spontaneous remissions occurred and in others the most energetic treatment gave no results. Then, too, specific treatment has been found useful where infection could be positively excluded. Finally, Ripping claims to have found syphilitic patients recover from insanity where no specific treatment was applied.

These statements, as well as innumerable others to be found in the literature, tend to throw doubt on claims that any given psychopathic condition is syphilitic, and yet as was remarked by Kraft-Ebing and agreed to by Mott: "The more we study paresis the more we find it associated with syphilis;" and the former declares with a measure of truth that civilization and "syphilization" go together, however discreditable this fact may be to the former.

The recent report of the Pathologic Laboratory of the London County Asylums by F. W. Mott[6] contains valuable information concerning the pathology of syphilis, the structural changes and to some extent the mental symptoms. That which seems most pertinent to the present inquiry in Mott's work is the placing in clearer light the fact that syphilitic brain disease, as distinguished from paresis, affects, primarily, vessels, lymphatics and membranes—mesoblastic structures—and the degeneration of neurons is secondary. Paresis, on the other hand, is a primary decay of the neuron itself, but it is not clear that the mental symptoms of the two processes can be differentiated. Indeed, Mott gives the phenomena of irritation and other psychic symptoms as characteristic of early changes in both. The primary progressive degeneration of neurons starts at the highest and latest developed structures, speech and association centers, and attacks by preference the frontal and central regions. Mott describes stupor, dementia, weakening or loss of memory and intellect, and many other symptoms, but does not give any distinctive characteristic of different syphilitic processes; neither can we distinguish these as being different according as syphilis is or is not found. Mott considers "stress" to be the important proximate factor in the development of brain disease, in one affected with syphilis. Stress is, however, perhaps equally the proximate cause in psychoses where syphilis is not concerned.

Since as yet we have in psychiatry so little in the nature of known definite psychopathic symptoms which can be associated with molecular or even coarse changes in the brain; since as yet we know nothing of the *modus operandi* of mental changes as associated with pathologic findings, and since our classifications of mental disease are in a purely tentative and conjectural condition, it seems premature to attempt to formulate syphilitic psychoses. The very inconsistency and lack of type in symptoms taken by some to be indications of syphilis, are interpreted by Kraepelin to be characteristic of chronic and permanent mental deterioration—Verbloedung's processe. We all meet with cases for which there seems to be no place by any method of classification as yet devised.

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[5] E. C. Spitzka: Manual of Insanity, p. 244.

[6] Annual report of the Pathologic Laboratory of the London County Asylums, 1900. Abstracted by J. H. McBride, Southern Cal. Pract., April, 1901.

Clinical psychiatry must unite psychical events in the course of each recognized psychosis, with a negative or positive report from the autopsy table, before the influence of syphilis on mental operations can be determined. We can not doubt but that psychic life is intimately associated with matter, i. e., with brain cells, but we are as yet without data which would enable us to connect objectively the functionating of those cells either in health or disease, with any changes in their form or substance. Even the pathology of general paralysis, the best known of all, is only indefinite as to mental changes and their relation to physical changes.

I am aware that I have only touched the borders of this far-reaching subject, and that most of what I have written is only of negative value, if of any at all.

I have sought something more tangible in reviewing my records of the past six years, covering over 1200 cases of all forms of nervous and mental disease. I found among these 45 cases of well-substantiated, constitutional syphilis. Doubtless an equal or greater number which I rejected for want of definite knowledge might have been included without serious error, but considering only these 45 cases, they were made up as follows: 17 were diagnosed as paresis; 12 as syphilitic brain disease with symptoms of organic lesion; 7 were cases of psychoses with marked delusional characteristics and without symptoms of brain syphilis, the mental symptoms taking the form of delirium, stupor, extremes of exaltation and depression, aphasic attacks and mild dementia; 4 having ophthalmoplegia and optic neuritis: 4 were cases of hypochondriacal melancholia, and of these, 3 temporarily improved, the other was a morphin case: 2 were cases of tabes with emotional weakening as the only mental failure, and there was one case each of slight dementia, melancholia and dementia paralytica of senile form. The type of mental disorder in the 17 cases of paresis was expansive in all except 2; marked confusional condition was present in the two depressed cases, and in 9 of the expansive cases confusion was also a very prominent feature.

These cases were gone over and tabulated with reference to the following points: The type of hallucinations and delusions, where present; the cranial nerve symptoms; the evidence in each case of syphilis; the habits and occupation; the outcome as to the history of marked stress as a factor producing the mental disease, and the time of infection prior to appearance of psychopathic symptoms.

I found, however, that these tables possessed but little significance, partly because no useful deductions could be made from such small numbers, and partly because the exclusion of so large a number of probable cases for want of a positive diagnosis seemed to me in a measure to vitiate the result.

Progress in Peru.—The Lima medical papers are rejoicing over the accession of a portable disinfecting oven, and the bacteriologic laboratory recently installed in the public hospital, which, by the way, bears the unique name of the Second of May Hospital—"Dos de Mayo."

SYPHILIS OF THE NERVOUS SYSTEM—ITS GENERAL PATHOLOGY, WITH REMARKS ON TREATMENT.*

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The initial lesion of syphilis must be viewed, in the light of our present knowledge, as a wound plus infection, the infecting material being probably of bacterial origin.

The first nervous changes following such infection are localized at the sight of the initial lesion, and have been well described by Berkley.[1] Briefly, these changes consist of a combined interstitial and parenchymatous neuritis, due, in the investigator's opinion, to, 1, compression by the round-celled exudate; 2, endarteritis, interfering with nutrition; 3, local effect of a "virus."

The conditions found in the nerves are described as, 1, obliteration of lymph spaces; 2, disappearance of axons; 3, a "glassy" degenerated appearance of, the myelin.

These changes were limited to the nerves imbedded in the round-celled exudate; those nerves not so surrounded being normal, or approximately so. Root-neuritis, cranial and spinal, and peripheral mono-neuritis may occur as secondary lesions.

Syphilitic multiple neuritis has also been reported, one case by Fry,[2] a year after the initial lesion; and a case by Cestan,[3] who notes three others with more or less doubt. The extreme rarity of the affection and the possibility of other causes in any given case tend to render the diagnosis problematic.

The second evidence we have of invasion of the nervous system by the disease or its products, is in the production of fever—"syphilitic fever"—often overlooked and sometimes misinterpreted.

The actual pathologic process at work here is unknown. Presumably, in the proliferation of the microbes of the disease, a toxin is set free in the tissues, which, carried by the blood stream to the cerebrospinal axis, irritates certain hypothetical thermo-genetic centers, or depresses certain other centers equally hypothetical, which are assumed to control or direct thermolysis. Another explanation to be considered leaves out of account any such "centers" and attributes the febrile process to alterations in the chemical constitution of the tissues generally, by the toxin of the disease. These alterations giving rise to perversions of metabolism with increased heat production or diminished heat dissipation.[4]

The third group of processes to be considered, that which is by far the most important to us, in a practical sense, is the inflammatory group whose characteristic lesion we call a "gumma."

The great fact of importance in this group, as regards nervous syphilis, is that gummatous syphilis in its beginning is a vascular syphilis.

Since all vascular organs are, in their developmental nature, of connective tissue (mesoblastic) type, it follows, as a corollary, that vascular syphilis is necessarily connective tissue syphilis. Hence to the tissues of this type (blood, dermis, basement membrane, areolar tissue, bone and cartilage), must we look for the initiation of the pathologic processes which invade the nervous, as well as the other anatomical systems.

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* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Nervous and Mental Diseases, and approved for publication by the Executive Committee: Drs. Frederick Peterson, Hugh T. Patrick and H. A. Tomlinson.

Nervous tissue proper, therefore, owing to its nonvascularity, is never the primary seat of inflammatory processes, whether these be due to syphilis or to other causes.

While it may be said to be an accepted axiom therefore, that gummatous syphilis is primarily vascular syphilis, it does not follow that it must be an arteritis or a phlebitis. It is often a lymphangitis, using this term in its broad sense, to cover involvement of the lymph-channels generally of the nerve centers. Thus the so-called peri-arteritis is often a lymphangitis in its inception, beginning in the peri-arterial lymph sheath. There are reasons for the belief that gummatous meningitis of the diffuse form may be also of lymphangitic type. As regards the best known vascular lesion, arteritis, the discussion as to whether a "peri-arteritis" (Baumgarten), or an endarteritis (Heubner), is the *more characteristic vascular lesion of syphilis,* would seem to be a superfluous refinement in localization from either a diagnostic or a therapeutic view-point, since in either event the exudate is within the wall (not within the lumen) of the vessel, and eventually involves its entire thickness.

The important event in syphilitic arteritis is the impairment of the nutritional integrity of the endothelial lining, whereby thrombosis with its resulting necrotic softening is directly produced.

It is customary to picture the changes in the vessel wall as a heaping up of proliferated cells, presumably derived from the deep endothelial layers of the inner coat. It is not probable, however, that the closure of the vessel is ever due merely to mechanical effects of this accumulation. Long before closure would occur from this cause, the inner lining, which must be continually shed, molecule by molecule, has been replaced by the rapidly reproduced and hence imperfect cells of the deeper layers. These again are being gradually deprived of their nutrition—from the vasa vasorum via the intramural lymph spaces—by reason of the increasing pressure of the exudate in the middle and other layers of the vessel wall, and possibly in addition are directly affected by the toxin of the disease. Hence, it is only a question of time that the inner wall of the vessel at the affected area comes to be lined by an endothelium defective in nutrition, possibly actually necrotic in places. Thrombosis, then, is the inevitable result.

As regards the direct local cause of the endarteritis, we must assume that the active agents in its production, which are at present supposed to be bacteria, are carried to the points of inflammatory reaction by the vasa vasorum.

We reject the main blood stream (of the lumen) as a source of the infection of the wall, by reason of the fact that inflammation presupposes stasis followed by exudation. Stasis, however, is not likely to occur in a large or moderate-sized artery. It is only in the capillary plexuses of the vasa vasorum and their nutritive successors, the intramural lymph spaces; or again, in the terminal capillary plexuses of the ordinary artery, that conditions favorable to stasis occur.

Pathologically, therefore, *syphilis of the central nervous system is primarily a lymphangitis, phlebitis or arteritis,* or any combination of these. The product of the inflammation is an exudate consisting chiefly of small round cells with a tendency to, 1, central necrosis, when in massive collections—gummatous tumor—or, 2, a tendency to fibroid organization when spread out in thin layers—gummatous meningitis, diffuse arteritis, etc.

In accordance, therefore, with the stage and progress of the process we may have, 1, a gummatous thickening, plaque or tumor; 2, a caseous abscess; 3, a cicatrix. In either event the nervous manifestations are secondary and due to, 1, thrombotic occlusion of nutrient vessels causing necrotic softening in their areas of distribution; 2, mechanical pressure causing secondary degeneration of neurons or their processes; 3, interference with the return circulation in lymph channels, causing local toxic states; 4, arteriosclerosis of varying type, probably responsible for various nerve degenerations of chronic character, e. g., nuclear palsies, locomotor ataxia, paresis, etc.

The question naturally arises: Is all inflammatory syphilis essentially alike, i. e., due to gummatous deposits of varying shape, in and around arterial, venous or lymphatic channels? This must probably be answered in the affirmative; the differing "types" of gummatous disease, meningitis, massive gumma, and arteritis "obliterans" being variations due to differences in size, number and distribution of foci. The possibility of a "mixed" infection in some cases must be conceded; to this abscesses proper may be due at times.

Hereditary syphilis as it affects the nervous system, may develop as a gummatous arteritis or meningitis, pathologically identical with the acquired form in adults. Many of the infantile hemiplegias and spastic paraplegias are probably of this type. Defects of a developmental nature, however, also occur in children, showing themselves in the various forms of idiocy and imbecility, which probably rest in great part on a foundation of vascular degeneration. It is quite probable that the proportion of children showing distinct syphilitic lesions of hereditary origin is commonly overestimated, as compared with the non-syphilitic from the same class of parents. Almost every practitioner can recall numerous cases where the children of syphilitic parents have all escaped; and other cases where one child is marked with, and others free from, syphilis. Statistics bearing on this point would be desirable.

We must not lose sight of the fact that gross lesions, i. e., meningitis, gumma, arteritis followed by softening, are not the only results of syphilitic infection of the nerve centers. Encephalitis, in multiple and minute foci, situated about the terminal capillary plexuses of the cortex, may probably occur, damaging various association tracts and operating as an important factor in the production of syphilitic epilepsy, some of the psychoses, etc. Accurate observations on this form of encephalitis would be desirable.

What is the most frequent site of the gummatous process in the nerve centers? This question is evidently a difficult one to answer, since many cases present multiple lesions. Most authors state that, 1, basilar meningitis is the most frequent cerebral lesion. Next follow in order, 2, meningo-encephalitis of the convexity; 3, arteritis with thrombosis and softening. In the cord, the most frequent lesion is said to be a meningo-myelitis; next to that arteritis with local softening. The writer's experience is at variance with this statement as shown by the following analysis: In 100 consecutive cases, about equally distributed between hospital and private practice, the preponderating lesion was diagnosed as follows:

Thrombosis with softening (hemiplegia)........	41
Meningo-encephalitis of vertex.................	23

Basal meningitis	11
Cerebrospinal disseminated lesions	10
Focal myelitis (including also "transverse")	12
Meningo-myelitis	3

Excluded from the enumeration, but in serial connection with it are:

Massive gumma	1
Psychoses (probably of meningitic or encephalitic origin)	2

Another question of importance is: Has chronic diffuse syphilitic arteritis any distinguishing features by which it may be recognized from arteriosclerosis due to other causes (chronic uremia, gout, alcohol, etc.)? To this most competent observers reply in the negative.

It has been assumed[5] that, in the localized softening following a syphilitic thrombosis, we have an "ordinary" or non-specific lesion to combat. Is this true? Probably it is, for a short time, of the softened area itself. But what follows this softening? In the surrounding tissue, hyperemia, exudation, proliferation; in short, secondary inflammation. Is this non-specific? It would be remarkable to think it was when we reflect upon the proximity of the original infected vessel. We all know the tendency of ordinary external wounds in a syphilitic to take on the "specific" inflammation; and how often they heal slowly or refuse to heal, until treated with anti-syphilitic remedies.

NATURAL HISTORY OF SYPHILIS.

During the early or "primary" period of the disease, following immediately upon the infection, we must assume the local proliferation of the microbes (bacteria?) and the collateral production of a toxin which produces a localized degenerative neuritis as well as the "general" symptoms, fever, malaise, muscular pains, etc. This period probably *terminates*, as does the febrile stage of the ordinary exanthemata, by reason of the production of an antitoxin which terminates the life or activity of the micro-organisms in great part, leaving, however, a few, possibly in a "sporule" stage for the future development of foci of gummatous inflammation in various situations. This is probably the natural course of the disease when uninfluenced by treatment of any kind.

The writer has seen such a case, untreated for thirty years, in a man of 55, who had received internal medicine (nature unknown) for only a couple of weeks at the time of the initial lesion. All these years he had been subject to repeated crops of subcutaneous and intramuscular gummata which had caseated and cicatrized, with little or no interference with his general health, and which he ascribed to hereditary "scrofula" in his system, of which there was, in my opinion, no evidence. When he consulted me for a paraphasia verbalis without paralysis due to slight thrombotic softening, he had two of these caseating gummata on the back, each as large as a pigeon's egg, of which he made no mention, so accustomed had he been to the presence of similar lesions for thirty years. On stripping him for examination these were discovered, and in addition, dozens of characteristic cicatrices, and intra-muscular indurations, situated on trunk and extremities, marking the sites of former gummata. He made a fair recovery from the aphasic symptoms and was kept upon mercury and iodids at intervals for about two years, during which time he enjoyed fair health. He had all his life an especial liking and capacity for mathematics, and this was apparently not diminished. As he lived at a distance he became somewhat irregular in his visits and when he consulted me again, after an absence of some months, he presented a marked motor aphasia, with slight right hemiplegia and a mild degree of dementia, probably all due to multiple foci of softening. Death followed in a few months.

The gummatous process is, therefore, in a measure self-limited. It is also in its inception to be viewed as a conservative process; like all inflammation it is evidence of resistance to an invader. When this disappears the gummatous process, like other inflammatory actions, ceases. What checks it? Three things:

1. The insufficient blood supply at its center, leading to necrotic softening and caseation.
2. The possible (even probable) development of an antitoxin which checks the local proliferation of microbes.
3. Removal of the necrotic tissue in part, by the leucocytes of the surrounding exudate, or, in the nerve centers, possibly by the mossy glia cells (scavenger cells of Bevan Lewis).
4. Organization into cicatricial tissue of the remaining elements of the inflammatory exudate.

Pathology is certainly of greatest value when it points the way to a rational therapy. May we hasten in any manner the more desirable of these processes? This, it seems to me, is the therapeutic problem to be solved.

While the limits assigned to the present paper forbid any extended or detailed remarks on treatment, some general considerations of the subject may be permissible.

We have come to speak so confidently of treatment by mercurials and iodids as "specific" treatment, that it does some violence to our therapeutic optimism to question their "specific" attribute. And yet it seems that we must logically admit this to be a fragile idol, likely to be shattered by the cold logic of the laboratory. Do these remedies destroy the germs of the disease? Few will claim this at the present day. The hypothesis of Gowers and others, that they may destroy the germs but not the "spores," is an attempt to explain the obtrusive fact that they do not, as a rule, prevent future gummatous developments. How then may mercurials and iodids act in gummatous disease? They are erroneously called 'absorbents," but we know that no drug is an absorbent. The very term absorbent, as applied to drugs, is almost as objectionable as that other absurdity, "keeping the bowels in a soluble condition."

What useful purposes may these remedies subserve in promoting the disappearance of syphilitic exudates? Simply and solely to destroy the already feeble vitality in the newly developed cells of the gumma, to poison *them in fact*, after which fatty degeneration, necrosis and liquefaction naturally follow. The lymph spaces, the real absorbents, do the rest. Thus the available material for future cicatricial tissue is reduced to a minimum, with corresponding lessening of future pressure and nerve degeneration.

How may these remedies act in the florid stage of the disease? Simply in the same way, so far as we know, namely, by promoting disappearance of inflammatory accumulations. Few will claim that they actually destroy the germs.

It is conceivable, however, that by stimulating excretion generally by the bowels, kidneys, and skin, they may also promote elimination of a considerable portion of the toxin proper. We should not lose sight of the fact, moreover, that these agents used within proper limits may stimulate the activity of the hemopoetic system, producing a degree of leucocytosis which may be useful in combating the microbes proper. Thus are we relieved of any necessity for a therapeutic nihilism.

In some cases the natural vigor of the patient, assisted by remedies judiciously used and hygienic measures, may apparently exhaust the stock of microbes and the patient remain well of active syphilis at least.

Does this render him secure from degenerative changes? Statistics appear to show that it does not—(Collins[10]). What then may be the cause of such degenerative diseases as locomotor ataxia, paresis, etc.? The hypothesis most in favor at the present day, is that of Strümpell that it is a post-syphilitic toxin, a by-product, so to speak, of the vanished syphilis, which, circulating in the blood, poisons the neuron, but does not excite inflammation. This hypothesis is untenable in the cases, well attested, of locomotor ataxia and paresis, without preceding syphilis. A more plausible explanation, to the present writer at least, lies in the fact of extensive fibroid and hyaline vascular changes, which affect the arteries both in syphilitic and non-syphilitic subjects. (*Vide* Berkley.[7]) The syphilitic toxin, while it must be conceded a frequent cause, is certainly not the only cause of vascular degeneration.

A long-standing and widespread arteriosclerosis or hyaline degeneration is a sufficient factor for the production of degenerative nervous disease, without the intervention, at the time, of any toxin. Thus we may account for many cases of degenerative nervous disease without necessarily invoking the aid of a post-syphilitic toxin, or of syphilis in any form.

Are mercurials and iodids of value in these degenerative nervous diseases? Modern neurological opinion tends to the view that they are not. From what has been said of the modus operandi of these remedies, it is difficult to ascribe to them any virtue in non-inflammatory nervous lesions, where the neurons are undergoing a molecular death from starvation. What good effects are observed from them are in all probability due to collateral influences on secretion and excretion, apart from the nervous degeneration proper.

As collateral at least to the present topic, we may ask. should we withhold mercurials and iodids in a central softening from non-syphilitic thrombosis or hemorrhage? I think not. The fact that these remedies are obnoxious to all newly formed tissue elements, may render them useful in the secondary exudation which always surrounds a gross vascular lesion in the nerve centers. Hence, judiciously used they may limit the amount of organizable material and thus lessen the consequent area of irritation or degeneration in adjoining nerve elements.

It sometimes happens that a patient with extensive cerebral softening, under mercurial treatment, develops a marked rise of temperature. This is not necessarily or even probably mercurial fever in most cases. It would appear to the writer to be due to the rapid breaking down of the necrotic area and the cellular exudate, with the absorption of the debris into the general circulation too rapidly to admit of complete oxidation and excretion. Hence, the pyrexia is more or less septic in origin. It is wise in these cases to omit mercury for a few days and then resume it when the fever subsides.

May vascular disease, widely spread, without foci of gummatous growth, exist as a result of syphilis and give rise to marked nervous manifestations?

The probability is that it may. Berkley[6] has reported two such cases; one with autopsy, in which the chief vascular findings were an extensive and widespread infiltration of the media of the arteries with a hyaline-fibrous material which materially narrowed and in some places even occluded the caliber.

This degenerative change was present in the arteries of the gray matter of the cord, more particularly in those of "Clarke's columns," and in the medulla oblongata; it was also present in the spinal root arteries and in the skin tissues. The writer has under observation a case presenting similar clinical features, in which, however, syphilis can not be traced.

The importance of recognition of this condition when possible lies in the fact that no therapeutic measure known to us has any favorable influence on hyaline vascular degeneration. We may do well to remember, however, that combination of degenerative lesions and inflammation are frequent (Berkley[7]) and that remedies may exert a favorable influence on the inflammatory element.

One more reference to therapy in the light of modern pathology. What have we to look forward to as an improvement upon present modes of treatment? The discovery of an antitoxin serum treatment, similar to that of diphtheria, must be conceded as possible. The arrest, and caseation or cicatrization of gummatous exudates in cases untreated by medicines, as in the one before cited, furnishes us a basis for hope in this direction. The difficulty of transmitting syphilis to the lower animals, which has heretofore hindered experimentation in this direction, will not necessarily always remain unsurmountable.

Neviorovsky[8] has reported favorable results in recent syphilis, from injections of human serum taken from subjects of tertiary syphilis.

Again, remarkable results in two cases have attended the use of Hayem's artificial serum (sodium chlorid 7 gm., crystallized disodic phosphate 2 gm., water 1000 gm.). Half of this was injected every five or six days in addition to mercury and iodids, in cases, which had obstinately resisted the latter remedies alone. The lesions yielded rapidly to the combined treatment.[9]

SUMMARY.

The pathological processes concerned in syphilis of the nervous system comprise:

1. A localized parenchymatous and interstitial neuritis at the site of the initial lesion, due to endarteritis, compression and local toxic action.

2. A localized root neuritis (cranial or spinal), and a peripheral mono-neuritis, both of gummatous type. may occur in the "secondary" stage. A generalized or "multiple" neuritis has been reported, but is so rare as to be a pathological curiosity and open to doubt as to origin.

3. A generalized toxemia affecting the nerve centers directly or metabolism in general and producing febrile reaction of a "specific" type, i. e., "secondary" fever.

4. Inflammatory ("gummatous") lesions, due to disseminated or localized vascular infections. The arterial walls are the chief seat of these gummatous exudations, and the exudate may begin as a "periarteritis," a mesarteritis or an endarteritis, eventually in most cases becoming a "panarteritis"—Berkley. The exudate is always intra-mural—not intra-lumenal—the narrowing of the lumen being due to concentric or nodular thickening of the walls, and heaping up (proliferation) of the deep endothelial layers of the intima. Necrotic changes in the inner layer probably precede thrombosis.

The infecting material (bacteria?) probably reaches the vessel wall via the vasavasorum, from which a portion of the exudate at least is derived. Direct infection of the lining endothelium, by the main blood stream, is unknown and probably does not occur, excepting in the terminal capillary plexuses.

The materials constituting the inflammatory exudate in all forms of gummatous syphilis, whether arteritis, meningitis or tumor are biologically identical, the differences which exist anatomically being due to location and distribution of the exudate. The characteristics of gummatous syphilis of the nervous system are: (*a*), the lesions are primarily vascular; (*b*), the lesions are usually *multiple*; (*c*), the lesions are usually non-systematized in a neurological sense, though they show a predilection for certain localities—namely, the basal meninges, and the arteries of the basal ganglia and motor area; in the cord, the meninges and the ventral horns.

5. Gummatous lesions are, in a measure, self-limited, their growth being checked by: (*a*), central necrosis, due to deficient vascularity; (*b*), the probable development of an antitoxin which checks the local proliferation of microbes; (*c*), fatty degeneration and absorption of the fluid portions with caseation or cicatrization of the remainder.

6. Degenerative nervous processes, due directly to syphilitic exudations, are of two types: (*a*), "compression" degeneration due to prolonged pressure by gummatous masses or their cicatricial sequelæ which separates various neuron processes from the influence of corresponding "trophic centers" (neuron bodies); (*b*) secondary degeneration consequent upon destruction of these same neuron bodies by softening, of thrombotic or hemorrhagic origin. The preceding two types are classed as "non-systematized" degenerations, in contradistinction to:

7. Degenerative diseases, of "systematized" type, such as locomotor ataxia and paresis. These should probably be looked upon as malnutritional affections due in part to arterial degeneration (fibrous or hyaline or both) which may or may not be of syphilitic origin; and in part to inherent individual predisposition to early dissolution of certain physiological systems. These degenerations are not benefited and may be made worse by vigorous anti-syphilitic medication.

8. Remedies of value in syphilis may act in three ways: (*a*), the most usual, by promoting necrosis in the embryonic cells of the exudate, thus permitting their removal in large part by the lymph channels; (*b*), by stimulating the excretory organs generally, thus favoring removal of "toxins" produced by the disease; (*c*), possibly by the promotion of leucocytosis and other tissue changes, which set free an increase of the natural amount of (hypothetical) antitoxin. In no case do these remedies act as "absorbents" or "stimulate the absorbents," nor have we reason to believe that they destroy the microbes of the disease.

9. Any lesion of the nerve centers, attended or followed by inflammatory exudate, whether syphilitic or non-syphilitic, may be favorably influenced by the judicious administration of mercurials and iodids; and subsequent amount of damage by cicatricial compression or irritation be materially lessened.

10. The discovery of a means of producing artificially an antitoxin which shall arrest the disease in an early stage, must be conceded as a possibility.

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DISCUSSION ON SYMPOSIUM ON SYPHILIS OF THE BRAIN.

Dr. C. B. Burr, Flint, Mich.—The fact which Dr. Patrick alluded to, in connection with the case mentioned, namely, that the history of infection so many years before caused him to doubt whether syphilis was at the bottom of the symptoms presented, would have led me to the opposite conclusion, inasmuch as in my experience ten or fifteen or more years may elapse after infection before the development of cerebral syphilis. My practice, however, is largely among patients presenting mental disturbance with brain syphilis.

Of cerebral syphilis accompanied by marked disturbances of the mental operations there are two interesting varieties: one in which motor symptoms predominate; the other in which the symptoms are altogether psychical. They are both characterized by reduction. This is their most conspicuous quality. In the one the symptoms are clinically difficult to distinguish from those of paretic dementia. However, there is less apt to be expansive delusions, remissions are more frequent and the disease is of longer duration. In the second variety there is psychical reduction, manifested in dementia, the symptom of lack of memory being the most prominent. There is also hebetude and the patient is dull and unresponsive.

Dr. H. D. Valin, St. Peter, Minn.—I would like to say something about the bacteriology of syphilis. About 1896 an investigator in Baden, Germany, thought he had discovered the bacillus, and he published a pamphlet on the subject. An insane asylum is not a very good place in which to study the bacteriology of syphilis, as in my experience, cases of recent syphilis are rarely encountered there, but I thought I could get some outside cases, and through the courtesy of our late commissioner of lunacy I secured some pus which he assured me came from a syphilitic bubo. This remained for two or three weeks without undergoing any putrefactive changes, which agrees with the statement that has been made that syphilitic pus contains some element which retards putrefaction. Upon examining this pus, I found a small bacillus, staining by Gram's method, which had the characteristics of the bacillus that has been described by Van Niessen. After the pus had been kept for several weeks, increased numbers of this bacillus were found. With this pus I also undertook some inoculation experiments upon animals, and in one of the animals I found three growths in the liver which had the gross appearance of gumma and appeared so upon section.

In another case I was called upon to make a blood analysis by a surgeon not far from St. Peter. This patient had been operated on by another surgeon, who saved the man's life, but the operation left a biliary fistula. In the blood and bile of that patient I found a few small bacilli which were similar to those described by Van Niessen. I found it very difficult to cultivate these bacilli. The work must be done on gelatin. The characteristic changes observed in the gelatin are these: After seven or eight days the upper layer will begin to liquefy, and this will continue until the gelatin is completely liquefied, and at the bottom is a mass of detritus which on staining shows the bacillus. This process of liquefaction also takes place when streptococci are present. Van Niessen states that he found the bacillus even in chronic cases of syphilis of the florid type. In a case of syphilis which came under my observation an examination failed to show any of these bacilli.

Dr. E. G. Carpenter, Columbus, Ohio—There are two points that I have observed in syphilis of the cord and brain. In the first place, in syphilis of the cord, and particularly in those cases where the disease has involved both the brain and the cord, I have noticed atypical reflexes, that is, they were active on one side and absent on the other, with more or less spasticity accompanied by ankle clonus. Another symptom which I have observed, is a slight loss of memory and some degree of dementia, with an accompanying depression sometimes amounting to melancholia. This, in my experience, is rather a common symptom in these cases, and it is in keeping with what we find in other diseases resulting from infection. For example, I have noticed this same symptom of depression in la grippe and typhoid fever.

Dr. John Punton, Kansas City—If the postulate laid down by Dr. Patrick in his paper is true, namely, that the symptoms in connection with cerebral syphilis are apt to present themselves within the first year and gradually decrease in frequency and severity as time goes on, then we must revolutionize our teachings in regard to the symptomatology of cerebral syphilis. From what the Doctor says, however, it would seem that he bases his claims on clinical knowledge. There are one or two points in connection with this subject that have not received sufficient emphasis. One is the temporary remission of symptoms that is not infrequently observed in cerebral syphilis. The patient may apparently be seriously ill on one day, and markedly improved the next.

Dr. Edward E. Mayer, Pittsburg—The postulates set forth by Dr. Patrick may perhaps be a trifle too emphatic, and yet they certainly have a good deal of truth in them. Certainly, his statement regarding the onset of cerebral syphilis and the presence of the initial symptoms agrees with what I tried to say yesterday in the discussion of Dr. Norbury's paper upon paretic dementia. Because syphilis has occurred ten or twenty years before, we should not ascribe to it the cause of the dementia, and the same is true here. In the symposium on syphilis of the brain to which we have listened, the essayists very rightly separated the somatic from the psychical conditions. One symptom to which I desire to call attention is the partial psychic defect. Dr. Patrick ably presented the characteristic features—the bizarre coming and going of symptoms, the progressive dementia; the coma, and the remissions and exacerbations which are so characteristic of brain syphilis.

Dr. Sydney Kuh, Chicago—If there is one thing that is peculiar to the syphilitic psychoses, it is the intermittent and irregular character of the symptoms. One of these intermittent symptoms is perhaps especially characteristic, although it was described nearly fifty years ago; it is almost forgotten to-day. I refer to the symptom which went under the name of the intermittent aphasia of Mauriac. As far as I know, the character of this intermittent aphasia is almost invariably motor. The first attack, which is incomplete and temporary, is followed by a second and more severe attack and the condition finally becomes permanent. Often it is the only symptom. I do not think such a recurrent motor aphasia occurs in any disease excepting in syphilis of nervous system and paralytic dementia.

Perhaps the importance of nocturnal headaches as a symptom of cerebral syphilis is somewhat overestimated. My experience in the last few years has brought under my observation several cases with distinct and severe nocturnal headaches which I had good reason to believe were not of syphilitic origin. In one, the postmortem showed an immense abscess of the lobes of the brain. Very little has been said about the treatment of syphilis, and perhaps it might not be amiss to call attention to one method which in very severe cases has given me most satisfactory results. I refer to the intra-venous injection of corrosive sublimate, as recommended by an Italian writer. The method seems more dangerous than it really is. A local thrombosis may follow the injection, and occasionally there is ulceration; this has occurred in two out of the twelve cases where I have resorted to this method.

Dr. Frank P. Norbury, Jacksonville, Ill.—Dr. Langdon, in his paper, spoke of the fever in syphilis. Some few years ago I observed a case of cerebral syphilis, or rather a case of acute insanity, the victim of syphilis in its secondary stage. During the first six weeks of the patient's stay in the hospital, I noticed a daily elevation of temperature. Whether this was due primarily to the syphilis or not I do not know, but I am inclined to believe that it was, and that the action of syphilitic poison in this case was the direct cause of the acute insanity. Melancholia was the form of mental disease, and I took it that the toxemia was so profound as to disturb nutrition, just as is noticed in typhoid fever, rheumatism and other infectious fevers. He recovered from his insanity and went to Iowa, where he subsequently resided. One day, eighteen months after leaving the hospital, he fell while walking along the street, and was picked up unconscious. He died in the course of a few days, and his death was attributed to some acute brain trouble.

Dr. Dewey, in reply—I do not know that I have anything more to say, unless it may be to give the periods of time that elapsed in my cases between the syphilitic infection and the onset of the insanity. In one case the insanity followed the infection within two years; in two, within three years; in three, within six years; in four, within seven years; in three, within eight years; in two, within nine years; in one, within ten years; in one, within twelve years; in four, within fifteen years, and in one, within sixteen years. In one, where nineteen years had elapsed since the syphilitic infection, the possibility of a second infection was thought of. This was the case of a religious brother who had been engaged in his priestly work for twenty years. He frankly acknowledged that he had been infected previous to that time, but the circumstances were such that a second infection could scarcely have occurred.

The symptom of loss of memory, to which one of the speakers referred, can not always be regarded as diagnostic of cerebral syphilis. It may be due to other causes. With reference to the intra-muscular use of bichlorid solution, I had a patient upon whom this method of treatment was employed. He thought the hypodermic injection was given to him for sedative purposes, and regularly fell asleep soon after administration.

Dr. Langdon, in reply—The suggestions made by Dr. Kuh were referred to in that portion of my paper which I did not get an opportunity to read. I mentioned the fact there that in the treatment of syphilis several improvements upon our present methods have been suggested by various writers. Among these is a Russian who in two or three very obstinate cases has employed an antitoxin with very favorable results. The antitoxin is obtained from the serum of old syphilitic patients, and is given by hypodermic injection.

PREVENTABLE DISEASE IN THE ARMY OF THE UNITED STATES—CAUSE, EFFECT AND REMEDY.*

MAJOR W. O. OWEN, M.D.
FORT THOMAS, KY.

Owing to the fact that my ideas, as expressed in a pamphlet that I had printed for private circulation, have appeared in part in the public press; and fearing that some one may be misled as to my intention and thought, I have concluded that it were better to express myself as fully as I can to the Academy of Medicine of Cincinnati and through it to the profession at large. I had no thought of making an attack upon any individual and therefore carefully abstained from using the name of any officer where possible offense might be taken My aim was to call the attention of my professional brothers to a state of affairs which appeared to me was costing the Government large sums of money and the soldier great and unnecessary suffering from preventable disease, to call attention to the fact that the Red Cross of the Geneva Convention, which was intended to protect the surgeon, was actually a menace to his personal safety, for he was unwittingly using it to protect property which belonged to the fighting force and was only loaned to the hospitals for temporary use. To ask you if you felt that you could agree with the position which I have taken that you put your shoulder to the wheel and help me to see if we could not as a body be able to create a public sentiment which in the future would lead to the correction of this, which I believe to be a wrong inflicted on the soldiers of all armies. I have seen in print that many medical men were sacrificed to save the military officer in the Crimea from the public clamor. Has not similar matter happened in the United States?

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* Read before the Cincinnati Academy of Medicine, Oct. 7. For discussion, see p. 1130.

There occurred from May, 1898, to June, 1899, in the armies of the United States, deaths from: diarrhea and dysentery, 342; typhoid fever, 2774; homicide, suicide, and gunshot wounds, 1020. Out of a total death of 6619: diarrhea, dysentery, and typhoid fever, 3116; homicide, suicide, and gunshot wounds, 1020. This is slightly more than three deaths from these well-known preventable diseases to one of homicide, suicide, and gunshot wounds. (See Table VII, page 349, Report of the Surgeon-General United States Army to the Secretary of War, 1899). It will be noticed that this includes the battle casualties of Cuba, Porto Rico and the Philippines to June, 1899. Was this loss an imperative military necessity?

I believe that the day has come when all sanitary matters of the army should be placed under the control of the Army Medical Department for the reasons:

1. That by so doing very large economies may be made in the maintenance of the army, both in money to the United States and in suffering to the individual soldier.

2. To enable the Army Medical Department to obtain the immunity guaranteed by international treaty, which at present is not fully done.

Under the first head I would call attention to the fact that nowhere in statute law are the duties of the army medical man laid down except in one place, which says that he shall attend to the families of officers and men free; and in one other, that the Secretary of War may assign him to such duties as he may deem for the best interests of the service: *"Provided,* that the medical officers of the army and contract surgeons shall, whenever practicable, attend the families of officers and soldiers free of charge." (Supplement Revised Statutes United States, Chapter 217, Paragraph 6, Vol. I, p. 457.) "That medical officers of the army may be assigned by the Secretary of War to such duties as the interests of the service may demand." (Supplement Revised Statutes United States, Vol. II, Chapter 270, Section 3, p. 53.) The opinion expressed by a medical officer that a man has defects that disqualify him for service as a soldier is not final; it is a common thing for these men to be accepted by special authority, the defects being noted on the enlistment papers.

There is no regulation, so far as I know, and I think that I know, which requires an officer in charge of construction to submit the plans of construction to the Medical Department for an expression of an opinion as to the sanitary results before beginning the construction. The result is that every post at which I have served, even the most modern, is full of sanitary error that has cost much money to correct, when it has been corrected. Much disease has been the result.

In the annual reports of the Surgeon-General will be found each year accounts of many faults of sanitation which have been reported in the preceding twelve months. Each of these faults could have been prevented by proper medical advice at the time when the original construction was being made. When examining these reports it should be borne in mind that attention is only called to the more glaring instances which have been brought before the office and that the mass is too great to be placed in an annual report.

All that the Medical Department can do is for its individual members to report errors and recommend their correction. It is only a courtesy when the commanding officer listens to his medical officer. He is compelled by regulation to listen, but he is given the expressed right not to carry out the recommendation made by his medical officer for the prevention of disease amongst his men. In other words, he is given, by regulation, control over matter of which he has no adequate knowledge, as witness the following:

> 1392. The Medical Department, under the direction of the Secretary of War, is charged with the duty of investigating the sanitary condition of the army and making recommendations in reference thereto, with the duty of caring for the sick and wounded, making physical examination of officers and enlisted men, and furnishing all medical and hospital supplies, except for public animals.
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> 1393. The surgeon, under the direction of the commanding officer, will supervise the hygiene of the post or command, and recommend such measures as he may deem necessary to prevent or diminish disease. He will examine, at least once a month, and note in the medical history of the post the sanitary condition of all public buildings, the drainage, the sewerage, amount and quality of the water supply, the clothing and habits of the men, and character and cooking of the food, and immediately after such examination will report thereon in writing to the commanding officer, with such recommendations as he may deem proper. The commanding officer will return the report, with his views and action indorsed thereon, and if he deem the action recommended impracticable or undesirable; will state fully his objections. The indorsement will be recorded in the medical history of the post, and the report and indorsement will be forwarded by the surgeon, through military channels, to the Surgeon-General. (Army Regulations, 1895, 1392-93.)

Constant changes are being made in posts by the quartermaster affecting sanitation. The surgeon, supposedly in charge of sanitation, finds or may not find them out before some one is dangerously ill or dead. If not before the disease has arisen, a search is then made, and reveals new and dangerous changes made in work previously inspected and found to be in good shape. Should he ask about it, he will be informed that these changes were made by the quartermaster whose business it is to look after construction.

At Fort ———— each company has ten wash basins, arranged in two gangs of five each, one gang on each side of the common trap and vent. This is a violation of the rules for plumbing issued from the Quartermaster's Department in Washington, D. C. It is also a violation of the plumbing rules of all of the large cities.

In time of war military necessity must control, but every precaution both in peace and war, but particularly in war, should be taken to put the soldier upon the highest plane of physical and mental excellence, so that he may be able to reach the highest efficiency as a fighting machine. Yet I have seen men drilled morning after morning in dew-laden grass until they were wet to the knee; have seen them living in overcrowded barracks, making a large sick report without actual necessity, etc., and the medical officer powerless to do aught but recommend.

Take the report of Lieut.-Col. A. S. Kimball, Quartermaster's Department, on the water supply of the Presidio, Cal. (See Report Surgeon-General United States Army to the Secretary of War, 1896, *pp.* 137-38). His report shows a water of undoubted high quality. He has based his report on the analysis made by Thomas Price & Son.

It is evident that these chemists were not informed as to the character of the water-shed from which this water is obtained. Mountain Lake, from borings around which this water is obtained, has a water-shed of two *and one-half to three square miles*; it is composed of seashore sand resting on a bed of rock. In this water-shed are three of the largest cemeteries of the city of San Francisco. A very large part of this water-shed is a closely-built city, with sewered streets, which sewers have uncemented brick bottoms. There are many animals stabled in it; all of the fecal matters of these animals and of this population is stored in this water-*shed; all of the products of the decomposition of the* bodies buried in these three graveyards drain into it; all of the excrement and kitchen waste of old Camp Merritt were buried in it. (There were some 18,000 men camped in this camp.) So long as the sand retains its ability to filter properly the water will be safe; when it becomes saturated with filth the health of the soldier at the Presidio will suffer. The water level of this lake has been lowered some twenty feet since the pumps have been at work. The officers of the Marine-Hospital Service tell me that they are afraid to use this *lake water without first subjecting it to sixty* pounds of steam. I made a careful chemical analysis of this water in 1899, and a careful personal inspection of this water-shed; *it was self-evident that there must be contamination* from animal source.

I believe that the analysis of Price & Son was correct when made; that the differences that exist between us are due to changes which have taken place from the *increased number of bodies in the water-shed, from the* increase in the population within the water-shed; that with these two causes that the sand is more soiled, and *therefore no longer filters so well as formerly.* It is a well-known fact that when sand is well aërated and not overloaded that it will filter out from 98 to 99.5 per cent. of all the germinal matter present.

Point Lobos Creek is the natural drainage channel of this water-shed. I was informed in the office of the Spring Valley Water Company that it had been formerly in use as a water supply for the city of San Francisco but that it had been abandoned for such use as it was too polluted.

The Presidio, with a water supply from this water-shed, was especially chosen as a model camp in which to assemble the troops for Philippine service, and the muster out of the returning volunteers.

Gen. ———————, in his testimony before the war investigating commission, says in effect that he did not listen to his chief surgeon as to the medical needs of those commands that were to be detached from him; that he took from others and gave to his personal corps medical material on requisition that his chief surgeon had disapproved; that he compelled his chief surgeon to personally look after a division hospital instead of al*lowing him to look after the larger duties of his position*; that he himself, in his own person, set the example of defying the recommendation of his Medical Department in drinking from a well that he was informed that the Medical Department had said was unsafe to use, and that he permitted the broken pump to be repaired so that the well might still be used. (See pp. 3080-81-85-86, Commission's Report, War with Spain.)

The general in a letter dated Nov. 12, 1898, uses the following language concerning his chief surgeon: "In the matter of the location of the troops in the camp, Col. ——————— was not consulted, so far as my recollection goes, nor did I deem it necessary to consult him: there was no need of it. Any 'protest' he made received such attention as the importance of it required."

The report of Reed, Vaughn, and Shakespeare says:

> Some regiments at ————, as we have shown, were so located that they received the drainage of other regimental camps. There was certainly no sufficient excuse for this. . . The —th Indiana was forced to contract its lines to half the regulation distance, and it was then only 30 feet distant from the —th Ohio. The sinks of the last-mentioned regiment and the kitchens of the —st West Virginia were only 12 or 15 feet apart." . . . (The —th Penn.). This command reached —— May 20, and was unfortunately located on low ground. Requests for a change of location were repeatedly made in June and July. The soil became muddy; the camp received the washings from the other camps above; the sinks rapidly filled with water and overflowed, and still requests for a change in location were unheeded until August 12.
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> As we have already seen, some regiments were improperly located from a sanitary standpoint. This was done by superior line officers, and sometimes in the face of protests from the medical officers. We have also seen that requests for a change in location were disregarded and regiments were allowed *to occupy one site for too long a time. In general the camps* became very filthy. It must be therefore admitted, it appears to us, that line officers were to some extent responsible for the conditions of the camps under their command. The medical officer can only recommend; the line officer can command.

Again the letter of the general continues: "Col. ———————'s impression of the water was not borne out by the analysis of it." Of this command 21.56 *per cent. suffered with typhoid fever, and* 714 men died of this disease in this camp.

What opportunity have sanitary officers to have their recommendations carried out; what opportunity to prevent disease, when the general in command treats his chief surgeon with disrespect both as to his person and as to his recommendation; when the general himself drinks a water that he is informed has been condemned by the sanitary officer? In another place, when the general has read to him a report made by a sanitary officer concerning this camp, he requested that he might be given a copy of the report, so that he might bring the reporter to trial before a general court martial. He was informed that it was not protected testimony, and where a copy could be had. His further action is not known.

The mortality of the Spanish-American war was 28 per 1000 living. The mortality of men in civil life, including the lame, halt, and the blind, is about 8 per 1000 living between 20 and 35, the age limit of the armies of the United States. The enlisted soldier of the army of the United States is selected carefully from the flower of young American manhood. Young men physically sound between 20 and 35, with proper sanitary care, should not have a mortality of more than 1 or 2 per 1000 per annum; excess over this means careless sanitary work, and 28 per 1000, which was the average of the Spanish-American war, means that the work was badly done in these camps, and that more than four-fifths of these diseases and deaths should have been prevented; they were not a military necessity, for no enemy was near. These lives should not have been taken; their mothers, wives and sisters should not have been thus grieved; the Government should have been spared this loss of life, and the loss of money needed to replace the dead and disabled, to pension the widows and dependents of the dead and to pension the disabled.

So far there has been allowed 6000 pension claims for the Spanish-American war; 44,000 claims are still to be adjusted. One to seven so far has been the average allowed; if these receive $100 per annum (the average for June, 1900, was $169.10) and the ratio holds, it means that the annual pensions for this war at present amount to $1,200,000, or the interest at 3 per cent. on $40,000,000.

Fully two-thirds of this list should have been saved by avoiding pensions to men disabled by preventable disease. These men are now disabled or dead; they, their widows and dependents, are to be cared for by the Government. How much better to have so cared for them that they had been returned to the bread-winners of the country! The normal death-rate of times of peace is largely increased in war times, not from injury, as many suppose, but from disease. These diseases are not so much from marching and maneuvering for battle position, but to the insanitary conditions of the camps, which, under a proper responsibility before the law of the land, can be easily corrected.

Look at the testimony given before the commission to investigate the Spanish-American war concerning Camp Alger, Fall's Church, Va.; concerning Camp Thomas, Chickamauga, Ga., with their pollutions of every possible class. The loss of life in these camps was more than forty times the corresponding loss in the city of Cincinnati, and one hundred times that of the City of New York (see "Purification of Public Water Supplies," J. W. Hill, p. 268).

The law should be so drawn that, without depriving the line officers of their proper military authority, yet it should fix definitely on whom this responsibility for the death and disability of the soldier by preventable disease rested; should fix when and under what conditions the Medical Department or the Line is responsible, or to fix it permanently on the one or the other. The law should fix the responsibility in order that some one man may be punished for the violation of established sanitary law.

No man, seeing before him the absolute certainty of having to account to the law, with his own body and reputation, for the loss of life, and for disease arising from his carelessness, lack of knowledge, lack of what not, will hesitate to apply the legal remedy and thus keep from his own shoulders the responsibility.

The saving to an army in suffering, to its individual men, to the Government in money paid in pensions, to the dependents of the dead, the disabled, and to men to replace the dead and disabled on the active lists is simply incalculable.

The cost to the individual soldier in suffering has been great from a lack of proper sanitary care. A careful examination of the medical histories of wars will show any man, who has made sanitation a study, what huge costs governments pay for a lack of sanitary law for their armies, and a fixing therein of the individual upon whom shall rest the responsibility for a breach of the sanitary law. Any military commander committing a military blunder which sacrifices his army is punished, but they are allowed to sacrifice men without number to insanitary conditions without question, without a word of condemnation, or even a thought of so doing.

TRANSPORTATION.

The other point to which I wish to call attention is the International Treaty, the so-called Geneva Convention, to which the United States is a party. This provides that all of the transportation and supplies of the Medical Department which go with the moving army, under its terms called "ambulances" (See Additional Articles, Article III, Geneva Convention), are exempt from capture and from being fired upon.

The greater part of these are under the control of the Line, and belong to the Quartermaster's Department, and are accounted for to this department. This condition makes all of this transportation liable to capture, and to be fired upon by the enemy, for they are unable to distinguish the transportation of the Medical Department (exempt) from that of the Quartermaster (non-exempt). This leaves medical transportation exposed to capture, etc., because unprotected by the International Treaty. (The Act of March 11, 1864, gives strict orders about ambulances, etc. The United States became a party to the Geneva Convention in 1882.)

The transportation of the Medical Department and many medical supplies were left at Tampa, Fla., by orders of the line officer when the army went to Cuba in 1898. The Surgeon-General should have had authority, and then he would have had the proper ship on hand, and would have moved all of his supplies and transportation on his own ship at the same time that the troops moved, and he would have had his material and transportation ready to disembark at the same time that the troops disembarked, and would have prevented the suffering that took place for the lack of this material and transportation when the fights took place. As it was, the comparatively small amount of material which the chief surgeon was able to take with the expedition was scattered throughout all of the ships of the expedition; he was compelled to devote much of his own time and that of other officers to try to get such portions of this medical property as was possible from the mixed mass of quartermaster, ordinance, commissary, and medical stores on board of these ships, instead of being able to attend to the proper distribution of both officers and supplies of his department.

The report of Captain E. L. Munson, Assistant-Surgeon, U. S. A., shows the exceeding difficulty which the medical department encountered in getting proper transportation for their supplies, showing that after much worry he obtained a four-oared boat, which was taken away from him after a few hours.

Should a field hospital be captured under present conditions, the first question by the enemy would be: "To what department does this material belong? Can the Line of your army take any of this material from the Medical Department and convert it to its own use, or is it exclusively for the use of the Medical Department?" The answer by our medical officer of necessity must be that "the axes, stoves, cooking utensils, hospital tents and all other tents, hospital flags and guidons, horse equipments, wagons, ambulances, mules, and horses, one and all belong to the Quartermaster's Department; that they were liable at any time to be taken by the Line, used by them for fighting purposes, and that the Line was the sole judge of when and for what reason this was to be done."

The enemy will very properly say that "you are sailing under false colors. We have no time for fine distinctions. We will take the whole outfit." Yet the medical officer is ordered to go into the field with this transportation, which belongs to the fighting force and to protect it by flying the Red Cross flag of the Geneva Convention over it until such time as the fighting force may need it. It is a clear violation of this treaty to place in the field hospital (ambulance) material belonging to the fighting force. Yet in the armies of the United States the "ambulances" are composed of material which the Line is obligated to take from the use of the sick and wounded whenever its needs require that they should do so, for not even the hospital flag or hospital tent is the property of the Medical Department. In fact all the wagons, horses, tents, etc., which go to form an "ambulance" belongs to the fighting force, and it is only loaned to the Medical Department until such time as the fighting force needs it again.

The word "ambulance" is ordinarily used to express the idea of a wagon so prepared that it will carry a sick or wounded man comfortably. This word, however, when used in the Geneva Convention is given a distinct and very much enlarged meaning. For the 3d Article of the additional articles gives to it the meaning of a field hospital or other temporary establishment which follows the troops on the field of battle to receive the sick and wounded. Hence, our English cousins and many others say "ambulance wagon," which translates into the vernacular as "hospital wagon."

It was the evident intention of the Geneva Convention to protect the sick and wounded. The ambulance wagon, the so-called Red Cross wagon or ambulance, because it is marked with the red cross of this convention, should certainly not be the only part of the field hospital which is protected from being fired on and from capture. The four and six horse wagons, the tentage, beds, bedding, and food are just as necessary to the care of the field hospital, and is, in fact, a part of it. The ambulance brings the patient to the hospital, the wagons move the tentage, etc., from place to place; as the command moves the ambulance wagon moves the patient, the wagons move the hospital. So long as the transportation of the Medical Department belongs to the Quartermaster and is only loaned for temporary use to the Medical Department, will the Line have the right—in fact, the obligation—to take it from the use of the disabled and convert it to the use of the fighting force, when they deem it necessary. What line officer will hesitate for a moment to take the mules from the Red Cross ambulance itself and send them for ammunition, should he be hard pressed and others not available. They do not bear the Red Cross. Certainly they will not hesitate to use a wagon marked Q. M. D., U. S. Army. This will enable the enemy to comply with the Geneva Convention and strip the hospital of everything that is likely to afterward be of use to the fighting force. The Line can at its own volition take quartermaster's property away from the Medical Department.

GENEVA CONVENTION—ORIGINAL ARTICLES.

Article I.—Ambulances and military hospitals shall be acknowledged to be neuter, and as such shall be protected and respected by belligerents so long as any sick or wounded may be therein. Such neutrality shall cease if the ambulances or hospitals should be held by a military force.

Article IV.—As the equipment of military hospitals remains subject to the laws of war, persons attached to such hospitals cannot, in withdrawing, carry away any articles but such as are their private property. Under the same circumstances an ambulance shall, on the contrary, retain its equipment.

ADDITIONAL ARTICLES.

Article III.—Under the conditions provided for in Articles I and IV of the convention, the name "ambulance" applies to field hospitals and other temporary establishments, which follow the troops on the field of battle to receive the sick and wounded.

What are the laws of war concerning the misuse of this protection?

RESPONSIBILITY.

The appended bill does not take command from the Line; but it does compel them to assume the responsibility for insanitary conditions which may arise when they choose to ignore the sanitary recommendations made to them by the Medical Department, when they do so without proper military reason for their action, and it does provide a legal remedy whereby the officer responsible may be reached by proper legal process. To assume the responsibility with proper military reason is a thing that the Line should at all times have the right to assume. In such camps as Camp Thomas, Ga., there were strong reasons to carry out sanitary law and none to ignore them.

On page 2981-83 of the report of the commission to investigate the war with Spain, Col. Hartsuff (the chief surgeon at Camp Thomas, Ga.), testified that he personally reported to the General in command that one of the camps was "outrageously foul; that it was an imperative necessity that this camp be broken up at once; that there are large numbers of typhoid fever cases in each regiment." His letter was dated July 11. 1898. On page 2983 he testifies:

Question: "Practically, then, all the recommendations that you made were simply paper manifestoes?"

Answer: "In most cases; yes, sir."

On page 3080 the General in command testifies:

Question: "Had any of the wells, General, been condemned by the Medical Department prior to your leaving the department?"

Answer: "By alleged Medical Departments? Two of them were erroneous, I believe, after examination into it myself. . . . Another well lying on the road between the Alexander House and Jay's Mill was also condemned. I drank of that well water every time I passed it until somebody broke the pump to pieces. I suppose it was some of our energetic medical fraternity, who had spent their time in finding that there was a suspicion of these two wells, and then I did not bother further about it."

Either the medical officer or the officer in command was at fault. Unfortunately, there is no fixed responsibility before the law for either the one or the other, and so it is that no one is punished for this most culpable state of affairs, except the helpless soldier, whose love of country leads him to an inglorious death and a premature grave by diarrhea or dysentery, a death as useless as it is preventable and expensive to the United States.

The question, plainly put, is, How many men lost their lives in 1898-99 from the incompetency of the commanding officer, or of the medical officer? Of the officer who was to judge of the necessity of carrying out the recommendation made or of the officer whose duty it was to recommend? It must perforce lie between the two.

Army Regulations, 1895, paragraphs 1392-93, make the medical officer responsible for recommendations, but gives none to the commanding officer for not carrying out the recommendations made, but gives him the expressed right not to do so.

No medical man will continue to recommend when he sees his recommendation treated with good-natured indifference, or worse, for by so doing he lessens the influence that he may have; he does, however, continue to talk to the commanding officer and try to influence him in the right direction in spite of the indifference with which he is met. The medical officer is compelled to obtain what he can in a sanitary way by means of placation and persuasion.

In answer to the above there will be many responses, which, when sifted, simply mean that those in command are unwilling to assume responsibilities for matters which they do not understand; that they feel that they must have absolute and entire control of everything in the army, both in peace and war; otherwise the victory is not to be won, etc.; that no man should be allowed to tell them how to take care of the men; that they have done so in the past and that they can do so in the future.

If the medical man in the army is not competent for the responsibilities above sought, the sooner that he is removed and replaced by competent men from civil life the better for all concerned. It is far more important that the medical man should have ability to prevent the ingress of disease into a command than to be able to treat it after it has arisen.

Command has grave responsibilities. In order that it may be effective it must have absolute and unquestioned control of men and material present. Among these responsibilities is that for insanitary conditions that may arise. Line officers are not trained sanitarians, medical officers are. Under the present law neither is responsible. All errors are charged to military necessity, unfortunate, but non-preventable.

The Omniscient has established a law governing the life of the typhoid bacillus as certainly as he has fixed the path for the several planets. The law of germ disease and the law of sanitation, while certain, are delicate and difficult of comprehension and require years of study to comprehend even in degree.

The layman of the highest intelligence does not comprehend the full relation of cause and effect in matters of sanitation, or in the transplantation, growth and destructive effect of the typhoid bacillus without long study. He prefers to call to his own family an expert physician when his wife or child is sick, and he takes expert advice; but when he is an officer of the Line he sometimes—nay, often—regards such advice as an invasion of his superior authority, and disposes of it by writing across the written advice of the expert employed by the Government, the report and recommendation of the medical officer, "Not concurred in," which disposes of the matter.

It is a breach of military discipline to undertake to argue with the commanding officer or to instruct him in sanitary care, or even as to the habits of the typhoid bacillus. Thus soldiers die, are disabled, and huge sums are paid for pensions which could have been avoided. Is it not best to leave sanitary matters in the hands of medical men? Is it wise to leave them in the hands of the Line officer? I have conceived the idea that the purpose of Congress in creating the Medical Department of the United States army was that the Medical Department should direct such measures as would give the General, when he offered or was to receive battle, the greatest number of men in the best physical condition, and to watch over the men that the smallest amount of disease may arise, so that the greatest number may be returned to their homes fit to earn the living for the family when the war is finished, and that the fewest be compelled to accept the provisions of the pension law.

In other words, if the medical officer is to take care solely of the sick and wounded, and the Line officer is to look after the sanitary condition of the camps, barracks and troops, then the most valuable part of the medical officer's knowledge is lost. Certainly his best work is done in preventing disease, and not in caring for it after it has arisen from insanitary conditions imposed by the imperfect knowledge of the Line. To put it another way, there are many medical officers who wish far more strongly for the power to enable them to control disease than for any increased rank that may be given them. Certain it is that the people should dread a war far more for the preventable diseases that may arise than for injuries that may result, and perhaps more still for the taxes for pensions due to such cause.

Compare anywhere the sanitary conditions which exist where the Medical Department controls and where it recommends. Compare the hospitals in the city of Manila with the barracks of the troops of that city. Compare the hospitals where the Medical Department has the command and where it is subjected to the command of a Line officer.

The most important thing to be brought out is, that neither the commanding officer nor the medical officer is responsible under the present law and regulation for insanitary conditions which may arise with the resultant diseases and deaths, that this condition is a great wrong to the soldier and that it should be corrected by law. Neither the commanding officer nor the medical officer can be punished under the present law and regulations. It is my firm conviction that when a man causes the loss of another man's life, by inattention to his duty, or by faulty judgment of what his duty was, that there should be some legal process by which to punish him for his inattention, or to remove him for his lack of correct judgment. Under the present law and regulation the cry is the same old cry which sacrificed the medical man in the Crimean war. The general saying that the medical officer did not inform him of the conditions, that he did not make the proper recommendations, that he himself had made careful daily inspections, that he did not see the conditions complained of; therefore, he could not issue the orders to prevent things that he did not know of. The medical officer answers that he did report day by day to the general, that he made the recommendations, that he foretold that which happened, that the general thought that it was best to let matters take their course. Both claim that the other is responsible and the public can not know which truly is. This very plea was made before the war investigating commission in 1898, when the question was up as to who was responsible for the great spread of typhoid fever and the unnecessary loss of life therefrom. There should be a code of punishment provided for those actions which lead to the death of men from preventable disease without military necessity.

RESULTS.

The results of such regulation were plainly visible at Camp Thomas, Ga., at Camp Alger, Va., and other camps of assembly in 1898-99. Numbers of men lost their lives through some one's fault. Has the responsibility been fixed? No! It is impossible to fix the responsibility under the present law and regulation. Such things should not be allowed in this day. The responsibility should be fixed on the medical officer, who is trained for this work, or it should be fixed on the Line, and it should be fixed by law. The principal thing is to fix the responsibility either on the Line or the Medical Department, but fix it so that it may not be evaded by any possible excuse, except that of military necessity in the face of the enemy.

The place *par excellence* to see the effect of this lack of law will be a classified list of the diseases and injuries for which pension has been granted, both for the Civil war and that of 1898-99. and a classified list of the claims yet to be adjusted. Take these lists to any man who is a sanitarian and ask him what percentage of the disease represented on the lists could have been prevented by a proper sanitary care, what percentage with good sanitary care would have left no permanent disability.

There is no man more earnestly in favor of the pension law than I am, but I do feel that it is far better to so treat the soldier that when the war is over he will return home in good physical and mental condition. To so return all but the killed and wounded would be perfection.

I do not wish to imply that the pension rolls have men improperly on them, but I do wish most emphatically to state that had the Medical Department had the power to control in sanitary matters a very large proportion of the deaths and disabilities from disease could have been prevented, and would have been.

The Line officer should have the power of command over his troops, but when he refuses to correct sanitary errors he should have a controlling and imperative strategical reason for his refusal. He should not be allowed to subject his command to insanitary conditions in time of peace, nor in time of war, knowingly, unless there be imperative strategic reason, which he could offer to his superior as a proper defense.

No good business man employs non-experts to supervise experts.

It is my belief that the army medical corps, as a body, cares more for the power to do its full duty to the army than it does for any increased rank or pay. In order to do its full duty to the army it must control in sanitary matters.

At present its sole function is advice and recommendation; its only power the mental strength of its individual officer, who sees the sanitary error, and his ability to persuade commanding officer to correct it.

The following table is taken from an abstract of the report of Reed, Vaughn and Shakespeare, on the origin and spread of typhoid fever in the military camps of the United States in the Spanish war in 1898, p. 193:

Command, Etc.	Number of Regiments.	Mean Strength.	Cases of Typhoid Fever.		Deaths from Typhoid.	Deaths from all Diseases
			Certain.	Certain and probable.		
1st Army Corps (Chickamauga)	22	27,380	2,912	5,921	344	397
3d Army Corps (Chickamauga)	17	20,568	1,741	4,418	417	469
4th Army Corps (Chickamauga).	7	7,507	440	1.498	99	112
2d Army Corps (Alger)	18	19,807	1,807	2,226	212	259
2d Army Corps (Meade)	12	13,962	1,799	2,690	150	168
7th Army Corps, 2d Division (Jacksonville).	9	10,759	1,729	2,693	248	281
Total.	85	99,983	10,428	19,446	1,460	1,686
7th Army Corps, 3d Division . .	7	7.990	. . . .	1,292	120	146
Grand total	92	107,973	. . . .	20,738	1,580	1,832

Command, Etc.	Number of Regiments.	Per cent. of deaths from Typhoid to all other deaths.	Morbidity of Typhoid Fever in 1,000 Mean Strength		Deaths from Typhoid in 1,000 Mean Strength.
			Certain	Certain and probable.	
1st Army Corps (Chickamauga).	22	84.13	106.35	216.25	12.19
3d Army Corps (Chickamauga)	17	88 91	84 64	214 79	20 27
4th Army Corps (Chickamauga)	7	88.39	58 61	199 51	13.17
2d Army Corps (Alger).	18	81.87	91 23	112 38	10 74
2d Army Corps (Meade)	12	89.28	128.84	192 67	10 74
7th Army Corps, 2d Division (Jacksonville	9	88 25	160.70	250.30	23 05
Total.	85	86 59	104.29	194.49	14.60
7th Army Corps, 3d Division.	7	82 19	. . . .	161.70	15 01
Grand total.	92	86.24	. . . .	192.65	14 63

Command, Etc	Total Deaths	Typhoid Deaths	Per cent. of Typhoid Deaths to all Other Deaths.
1st Division, 1st Army Corps (p. 13).	283	190	67.49
2d Division, 1st Army Corps (p 14)	135	109	80 70
3d Division, 1st Army Corps (p. 18)	210	180	85.71
Total (p. 21)	628	479	76.27
1st Division, 3d Army Corps (p. 26).	215	174	80 93
2d Division, 3d Army Corps (p. 30)	281	257	91 45
Grand total	1124	910	. . . . . .

Mean strength 1st Army Corps (p. 22)	27,380
Number of certain and probable typhoid fever cases (p. 22).	5,921
Number of certain typhoid fever cases	2,912
Percentage of death from typhoid fever, 1st Army Corps. . .	1.749
Percentage of death from typhoid fever, 3d Army Corps. . . .	2.146
Aggregate strength of the 17 regiments, 3d Army Corps (p. 33)	20,568
Total number of cases of probable typhoid in the 17 regiments of this corps (p. 33)	4,418
Percentage of cases of probable typhoid in the 17 regiments of this corps (p. 33)	21.47
Total number of deaths from typhoid fever in the 17 regiments of this corps (p. 33)	417
Aggregate strength of the 1st and 3d Army Corps, excluding the regiments that went to Porto Rico from the 1st Division, 1st Army Corps, the 1st South Carolina, from the 3d Division of the 1st Army Corps and the 1st District of Columbia Volunteers from 1st Division, 3d Army Corps (p. 57)	44,803
Total number of probable cases of typhoid fever among these troops (p. 57)	9,660
Percentage of probable typhoid fever among these troops (p. 57)	21.56
Total number of deaths from typhoid fever among these troops (p. 57)	714

Mortality per 100,000 living from typhoid fever was as follows: First Army Corps, 1749; Third Army Corps, 2146.

J. W. Hill, "Purification Public Water Supplies," pp. 268-71, gives the following death-rate for typhoid fever: New York, 21; Chicago, 83; Philadelphia, 64; Cincinnati, 67; The Hague, Holland, 3; Cairo, Egypt, 260.

The above is calculated on all living in the cities; those for the army corps are for men in the prime of life, from 21 to 35, selected after a careful physical examination (see enlistment papers in the Adjutant-General's office, Washington, D. C.).

Notter and Firth, "Theory and Practice of Hygiene," published by Blakiston & Son, 1896, p. 772, gives the annual death-rate per 1000 living males for age groups:

Age group.	1871-80	1881-90	1891-93
20-25.	7.4	5.7	5.4
25-35	9.4	7.8	7.4

Translating this to 100,000 living makes:

20-25	740	570	540
25-35	940	780	740

Death-rate per 100,000 living from typhoid fever alone in the army, the physical condition of the men vouched for at enlistment as sound, was as follows: First Army Corps, 1749; Third Army Corps, 2146.

On page 779 of Notter and Firth is given the following as the death-rate from typhoid fever per 1000 living in England and Wales:

1884	0.236	1889	0.176
1885	0 175	1890	0.179
1886	0 184	1891	0.168
1887	0.185	1892	0 137
1888	0 172	1893	0 229

The following, showing the annual mortality from several sources per million persons living at all ages in successive periods and years, is taken from "Vital Statistics," by Arthur Newsholme, published by Swan. Sonnenschein & Co., London, 1899, p. 320:

	1861-70	1871-81	1881-90	1891-95
Typhus	885	57	14	4
Enteric (typhoid)		322	196	174
Ill defined		103	25	8

The following table ("Vital Statistics," p. 203) shows the attack-rate and death-rate per 100,000 living from typhoid fever for the entire population of the city of London at each age period in 1896 for the two sexes:

All ages.	Attack rate—Males.	Death rate—Males.
20	117	26
25	107	22
35	60	19

The report of Reed, Vaughn and Shakespeare, p. 94, gives the following data for Second Corps:

	Attack rate—Males	Death rate—Males.
1st and 3d Army Corps, 1898	21,560	1,947
2d Army Corps, 1898	11,238	1,070

The mortality for the First and Third Corps together is about ninety-two times the corresponding loss in the city of New York, and twenty-eight times that of the city of Cincinnati, Ohio. The entire male population is included in the calculation for the cities. The First and Third Corps were men picked carefully for physical soundness less than six months previously. The attack-rate was about 184 times that of the city of London for 1896. The General in command of the Second Army Corps, in his testimony before the investigation commission, pp. 233-234, said: "I believe that the water, when it came from the wells, was as pure as when filtered; in other words, I would rather drink the water that came from the wells but I, of course, subordinated my opinions in those matters to my medical officers."

The General in command of the First and Third Corps says in his testimony, p. 3080, speaking of the water at Camp Thomas, Ga.: "Another well lying on the road between the Alexander House and Jay's Mill was also condemned. I drank of that well water every time I passed it until somebody broke the pump to pieces. I suppose it was some of our energetic medical fraternity who had spent their time in finding that there was a suspicion of these two wells."

Among the conclusions of Reed, Vaughn and Shakespeare are the following (pp. 178-188):

13. Typhoid fever is more likely to become epidemic in camps than in civil life, because of the greater difficulty of disposing of the excretions from the human body.

14. A man infected with typhoid fever may scatter the infection in every latrine in a regiment before the disease is recognized in himself.

15. Camp pollution was the greatest sin committed by the troops in 1898.

18. Many commands were allowed to remain on one site too long.

19. Requests for change in location made by medical officers were not always granted.

20. Superior line officers cannot be held altogether blameless for the unsanitary conditions of the camps.

As we have already seen, some of the regiments were improperly located from a sanitary standpoint. This was done by superior line officers, and sometimes in the face of protests from the medical officers. We have also seen that requests for change in location were disregarded, and regiments were allowed to occupy one site for too long a time. In general, the camps became very filthy. It must therefore be admitted, it appears to us, that line officers were to some extent responsible for the condition of the camps under their command. The medical officer can only recommend, the line officer can command.

21. Greater authority should be given medical officers in questions relating to the hygiene of camps.

In our opinion, it is of the greatest importance that more authority be granted medical officers in all matters pertaining to the hygiene of camps.

22. It may be stated in a general way that the number of cases of typhoid fever in the different camps varied with the methods of disposing of the excretions.

42. The continued fever that prevailed among the soldiers in this country in 1898 was typhoid fever.

At the second session of the Fifty-Sixth Congress, December 6. 1900, Mr. Hay introduced in the House of Representatives the following bill, which was referred to the Committee on Military Affairs and ordered to be printed:

A BILL.

To define the duties of the Medical Department of the Army of the United States.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the duties of the Medical Department of the army of the United States shall be as follows:

1. The direction of measures for the prevention of the ingress of disease among the troops of the army and of sanitary faults in location, construction (and management) of posts and camps.

2. The medical and surgical care of diseased and injured officers and soldiers of the army of the United States; the physical examination of all officers and soldiers entering or leaving the army of the United States.

3. The care (of) and accountability for all transportation pertaining to the movement of men and supplies of the Medical Department and (of) the sick and injured of the army.

4. The preparation and preservation of the records of transactions taking place under the three preceding paragraphs.

5. It shall be the duty of the senior medical officer of the (army), corps, division, or brigade (territorial division or department), in which an unusual outbreak of disease shall have arisen to at once take steps to investigate and determine the reasons therefor.

Should this investigation show any carelessness or inattention to duty, either upon the part of the medical officer or of the officer in command at the infected point, he shall at once make report (of the facts) to the officer in command (of the army, corps, division, or brigade, territorial division, or department), whose duty it shall then become to bring the offending officer or officers before a court-martial for such punishment as, upon conviction, the court may deem proper and the reviewing authority concur in.

6. The Secretary of War is hereby authorized and directed to prepare suitable regulations for the enforcement of the provisions of this act.

7. The Medical Department shall also perform such other duties as the President or the Secretary of War may deem for the best interest of the army.

All acts and portions of acts in conflict with the above are hereby repealed.

Should the ideas advanced in this paper meet with your approval, I most earnestly urge that you will take steps to have the public at large thoroughly informed on the subject. My object is and has been to obtain the best possible protection for the American soldier from preventable disease.

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DIAGNOSIS.

When called to a case, the young physician is apt to meditate more on what he shall prescribe rather than on what is the matter. As a student he was, perhaps, more diligently occupied in copying the pet prescriptions of his favorite teachers than in noting the care with which these same teachers sought to impress upon his mind the importance of diagnosis and the fact that a correct knowledge of the disease process, its cause and its natural course, must precede a rational therapy.

What the average practitioner thinks he wants, when, after a decade of practice, he attends a post-graduate school, is a knowledge of the new drugs and the latest method of treatment. He is satisfied with his ability to recognize typhoid fever, but has become discouraged because his last three cases died in spite of the treatment that had been so uniformly successful in scores of cases in years gone by. Had he made autopsies on his three cases perhaps he would have been surprised and shocked, and would have felt that his diagnostic, rather than his therapeutic, ability was at fault when he discovered no evidence whatever of typhoid, but an empyema in the one case, an ulcerative endocarditis in another, a tubercular meningitis in the third. Failure to make autopsies, lack of rigid criticism by consultants who are too prone to agree with the attending physician, and neglect of careful and repeated examinations in all cases that are atypical or in any way obscure, render a physician overconfident in his diagnosis; he often blames therapy where the fault is that he failed to understand rightly the nature of the disease.

The ability to make a correct diagnosis is not entirely the result of native genius. As Cicero said about the making of a poet, the natural ability is of great importance, but the man of surpassing merit is he who joins to his native talent the power that comes from education. The man of quick perception, of logical mind, and with acute special senses may make a rapid and apparently intuitive diagnosis. But in its ultimate analysis such a diagnosis is the result of study of books, and of experience at the bedside and in the laboratory; it implies weighing of probabilities and close logical reasoning; it is far from intuitive. This is the hard lesson to teach the young man who becomes discouraged as he ploddingly works over his case and still is unable to name the malady, or grows careless through his effort to work as rapidly as his preceptor or his superior. But practice in this line brings improvement as it does to the pianist, who soon reads and plays at sight music that was at first entirely beyond his grasp.

Many diagnoses are made with positiveness. When technique is faultless one may at times be able to pronounce a case tuberculous, or to declare the nature of a fragment of tumor, or the presence of fluid is proven by aspiration or a fracture recognized by crepitus, etc. Yet while the learned and trained physician is the most positive in his diagnosis when he is sure of his ground, no one is more cautious and guarded when positive signs are lacking, and no one more candid in saying, "I do not know." It takes some men many years before they attain that mental attitude commanding the wide horizon and giving them the clear vision so that they can look about and declare openly, "I do not know." Some men never reach this high plane; others lack the courage to confess what seems to be ignorance. But the intelligent layman who has tried his physician and not found him wanting, is willing to accept this confession of limitation of human power; he recognizes the feebleness of human insight into the workings of Nature, and he waits patiently until the physician is ready to announce his decision. The physician who is honest in his diagnosis has nothing to retract; he is not obliged to "hedge."

The physician who has had impressed upon him early the importance of diagnosis, who realizes the diagnostic ability is not a gift but an acquirement, and who gives his opinion not prematurely and guessingly, but conscientiously and after full deliberation, may not be brilliant, and may add little to the world's store of knowledge, but he goes about doing good; he commands the respect of his patients and his colleagues, and is free from the stings of conscience that come through mistakes committed through haste and carelessness.

THE DISTRIBUTION OF PHYSICIANS.

The recent census proves the source of not a few surprises in what concerns the distribution of physicians to the number of inhabitants in various parts of the country. It would not be surprising to find that doctors were most numerous in proportion to the population in the long-settled Eastern States. As a matter of fact this is not the case, however. California, Colorado, Kansas, Missouri, Iowa and Arkansas have more physicians to their population than any of the Eastern States except Vermont and Maryland. There are less inhabitants to each physician in Texas with its scattered population and magnificent distances than in Pennsylvania with its dense population, most of which is gathered into a few compact areas. Physicians are said to affect especially crowded centers of population, but some of these statistics would seem to contradict the old tradition and show that there is still a very large number of men who prefer a country life with its long, tiresome journeys to the pent-up city existence with its conveniences and social features, but absence of contact with nature.

With the exception of the District of Columbia, where, of course, many circumstances, such as political reasons, the glamour of fashion and of official life, and especially the presence of the medical headquarters of so many government departments, conspire to increase the number of physicians, California has more doctors to the population than any other part of the United States. The reputation of the State as a health resort is evidently responsible for this preponderance. Next after California in this matter comes Colorado, and for similar reasons. Physicians in delicate health are added to the practitioners who would naturally practice in the State, and, besides, graduates from a distance are attracted by the prospect of the superabundance of patients these States attract. For identical reasons Florida has distinctly a greater proportion of physicians to the population than any other Southern State.

It is evident from the census statistics that we must be rapidly approaching the limit of additions to the medical profession if the individual members are to find the practice of medicine a lucrative occupation. The New England States have an average of less than 600 inhabitants to each physician, New York has 596, while Pennsylvania provides 693 people for every doctor. New Jersey, with many health resorts but no medical school, and a rigorous examining board, has but one physician for every 881 inhabitants. The profession does not fare so well in the Middle Western States, where in Indiana there are but 519 people to each physician, in Ohio 529, in Michigan 575, and in Illinois 583. Meantime there are no special complaints of indigence among the members of the profession in California and the District of Columbia, though the number of inhabitants to each physician is respectively 392 and 389.

Curiously enough the distribution of the dentists of the country follows closely that of the physicians. They are thickest at the National capital, and after that in California. Colorado, for some reason not easy to understand, does not come third but is much lower in the list, the place being taken by Massachusetts. Utah has a very high place in the comparative number of dentists to the population, which would seem to show that the larger proportion of women in the State has led to the inevitable application of the rule of supply and demand. The prospects of making a living soon after graduation would seem to be still good in dentistry, the average number of dentists to the population of the country being only one to more than 4000 inhabitants.

HYPERTROPHY OF THE HEART.

Some new light has been thrown upon the manner in which the heart hypertrophies, and upon the causes that lead to cardiac hypertrophy both under physiological and pathological conditions, by the important work of Carl Hirsch.[1] Hirsch approached the problem in a somewhat different manner than previous observers; he employed more exact methods of study in that he separated the walls of the four cavities and considered each as an entity. This permitted the consideration of the relation of the mass of each cavity to that of the entire heart and of the general musculature of the body in health as well as in various diseases. It appears that the mass of the heart muscle is an expression solely of the work it accomplishes and that in sound individuals there is an intimate and direct relationship between the activity of the heart and the activity of the general musculature independent of conditions of general nutrition. Pregnancy was found to be of influence only in so far as it increased the activity of the muscles of the body as a whole. Glandular and nervous activity causes no direct effect upon the operations of the heart as expressed in its mass with the exception of exophthalmic goiter. Kaehl has demonstrated anatomically that the chief divisions of the heart are in reality quite independent of one another, and Hirsch shows that they are likewise independent functionally. Hypertrophy of one part may occur without any one of the other three parts participating. For example, in sclerosis of the thoracic aorta and splanchnic vessels the wall of the left ventricle is alone affected. On the other hand, in nephritis all sections of the heart are hypertrophied as a rule, a disproportional hypertrophy of the left ventricle being always due to vascular sclerosis according to Hirsch. In nephritis, however, the hypertrophy in incipient cases is limited more or less to the left ventricle, the other parts becoming hypertrophied as the disease progresses. Ewald suggests that in nephritis an increased viscosity of the blood is responsible for the hypertrophy of the heart, and since Hirsch's observations show that the obstruction to circulation must be of such character that the action of the whole heart is increased quite uniformly, Ewald's theory, although generally neglected, is considered by Hirsch to receive some support.

The opinion of Cohnheim that in weakness of the right heart the venous stasis may so increase the work required of the left heart that it may undergo hypertrophy, is widely accepted. But that this is the case Hirsch denies, citing in evidence cases in which there was protracted venous stasis without complicating valvular or arterial lesions and atrophy in place of hypertrophy of the left heart. This he explains by assuming that the accumulation of a large part of the blood in the vein lessens the amount of work that the left heart must do.

Another interesting observation is that in beer drinkers the hypertrophy known as "beer heart" indicates always an interstitial nephritis. Beer drinkers without nephritis have no hypertrophy of the heart.

In connection with these problems the study of the individual fibers in hypertrophied hearts by John Gutch[2] is of interest. He found that the increase in the size of the heart is to be explained by an increase in the size of the individual fibers, and that there is no evidence of new formation of muscle cells. The fibers increase chiefly in breadth, possibly also somewhat in length. He corroborates the statements of Hirsch in regard to hypertrophy of both sides of the heart in nephritis. The fibers in the left side are usually larger than those of the right, and the papillary muscles have smaller fibers than the walls whether the heart is normal or hypertrophied.

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[1] Deut. Arch. f. Klin. Med., 1899, lxiv, 597; 1900, lxviii, 55 and 321.

[2] Jour. of Path. and Bact., 1901, vii, 309.

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CONNECTICUT.

Hospital Site Vetoed.—The mayor of New Haven has returned without his approval the order establishing a hospital for contagious diseases at Springside on account of its distance from the city.

In Memoriam.—At the semi-annual meeting of the Hartford County Medical Society, held October 16, obituaries on the following deceased members were pronounced: On Dr. George C. Jarvis, Hartford, by Dr. Horace S. Fuller, and on Dr. Sidney R. Burnap, Windsor Locks, by Dr. Joseph A. Coogan.

Dr. Patrick J. Callaghan, Waterbury, arrested on the complaint of the county health officer, on the charge of practicing medicine without a license, and fined $100 and costs, has appealed, and intends to test the validity of the state law. Dr. Callaghan's offense is that he had not registered with the county health officer as required by the medical practice act.

Personal.—Dr. Henry S. Noble has been elected superintendent of the Connecticut Hospital for the Insane, Middletown, vice Dr. Charles W. Page, resigned.——Dr. John E. Martin has succeeded Dr. Lawrence M. Cremin as attending physician at the New Britain General Hospital.——Dr. P. Frederick Metz, New Haven, charged with malpractice, will not appear for trial; he has forfeited his bond and left New Haven.

DISTRICT OF COLUMBIA.

District Diseases.—Diphtheria is on the increase in the District; 60 cases are in isolation in 33 houses. Of scarlet fever there are 23 cases, and of smallpox 9 cases.

Personal.—Drs. John W. Mitchell and William H. Hughes, both of Washington, have been appointed assistant surgeons in the Freedmen's Hospital.——Dr. Benjamin B. Wechsler, Washington, has located in Knoxville, Tenn.——Dr. A. L. Swain, Washington, has moved to Athol, Mass.

Ask Adequate Remuneration.—The Board of Medical Supervisors of the District in its annual report calls the attention of the Commissioners to the fact that no provision is made for the adequate compensation of the various boards of medical examiners, or of the Board of Medical Supervisors. The members of these boards perform their duties solely in the interest of the public, and, under existing law, receive for their services whatever happens to be left over from the fees paid by applicants for licenses after the necessary expenses of the board have been deducted. No member of the board of eclectic medical examiners has received a cent for his services. The average amount received per annum by each member of the board of homeopathic medical examiners has been $1.75; by the lay members of the Board of Medical Supervisors, $20, and by the members of the Board of Medical Examiners, $32.14. The total number of applications is 1559, and the total number of licenses issued is 1411. It therefore requests that provision be made to pay each member of the Board of Medical Supervisors and each member of the Board of Examiners $10 for each meeting attended.

ILLINOIS.

Smallpox.—Springfield now has 31 cases of smallpox, and cases have also been reported from Riverton and Rochester.

The De Witt County Medical Society has passed a resolution that no physician shall be eligible to membership unless he has practiced medicine in the county one year.

Physicians' Club Reception.—Drs. John H. Mannon and Charles W. Hall, who have recently returned from Europe, were given a reception by the Physicians' Club of Kewanee, October 11.

Hospital Addition Postponed.—Although more than $6000 has been subscribed for the addition to the Rockford City Hospital, it has been determined to postpone building until next spring and to devote the winter to the completion of the fund necessary for the erection of the building.

Personal.—Dr. Lewis A. McFadden, Peoria, a member of the board of aldermen, has been appointed Health Commissioner, vice Dr. William T. Sloan, resigned.——Dr. Robert E. Calhoun, Chesterville, is taking post-graduate work in Chicago.——Dr. Arvid E. Kohler, Moline, is seriously ill at the Baptist Hospital, Chicago.

Moline Hospital Troubles.—The Moline Public Hospital staff has unanimously adopted resolutions asking the mayor to remove the present board at once, and in its place appoint a board of three physicians. Also to appoint an advisory board, to consist of physicians who shall be made regular members of the board as soon as the law can be changed by the legislature, making the board legally consist of seven members, instead of three, as at present.

St. Francis' Hospital Staff.—The medical staff at St. Francis' Hospital, Peoria, consists of Dr. Rufus A. DuMars, president; Dr. Ernest B. Studer, secretary, and Drs. Charles E. Davis, Alvin N. Keith, Frank C. Bourscheidt, Clifford N. Collins, Lewis A. McFadden, William H. Willis, Roland L. Green, Joseph V. Studer and Joseph J. L. Finnell. Dr. Edwin H. Bradley is the oculist, and Drs. Joseph Studer and Leonard H. Spalding comprise the consulting staff.

Chicago.

Medical Examiners Dine.—The medical examiners of the New York Life Insurance Company held a conference and dined together, October 19. Dr. Harry P. Woley presided, and among the topics discussed were family history, venereal disease, albuminuria and appendicitis.

To Avert Smallpox.—With a view to prevent the importation of smallpox, Chief Medical Inspector Dr. Heman Spalding, of the Department of Health, is visiting neighboring towns and aiding the local authorities to check the disease. He has recently visited Harvey and New Holland, Ill., and Michigan City, Ind.

"Passing-up" Prohibited.—President Harper welcomed 275 Rush medical students, both freshmen and sophomores, into the University of Chicago at Kent Theater, October 15, and then officially informed them that hereafter "passing-up" students and other ungentlemanly conduct in the lecture-rooms would not be tolerated.

University of Chicago Medical Club.—The first meeting of this Club, a medical society organized by the University of Chicago, was held at the Hull Physiological Laboratory, October 21. A paper was read by Dr. Jacques Loeb, on "The Influence of the Valency and Possibly the Electrical Charge of Ions Upon Their Antitoxic Effects," and one by Dr. Albert Peacock on "A Case of Myiosis in Man."

St. Gerard's Hospital, established a year ago, is insolvent, and a receiver has been appointed. The liabilities are said to be $8300 with assets of $2400. The plan of the projectors of the hospital was to care for as many charity patients as the patients who pay could support. For several months the charity patients exceeded in numbers those who could afford to pay and the hospital's affairs grew worse constantly. The income was far insufficient and contributions practically stopped.

The Lowest Death Rate.—A total of only 370 deaths from all causes recorded last week establishes the lowest weekly death rate in the annals of the Health Department. The mortality is at the annual rate of 10.95 per thousand. The lowest rates during the previous five years were 11.04 for the week ended Nov. 10, 1900; 11.28, week ended Oct. 29, 1898; 11.72, week ended Nov. 27, 1897; 12.12, week ended Nov. 25, 1899; and 12.20, week ended Nov. 7, 1896—an average of 11.67, or 6.5 per cent. higher than last week's rate. This marvelously low figure is due chiefly to the decrease of deaths from apoplexy, bronchitis, cancer, consumption, convulsions, heart disease, nervous diseases and pneumonia—there being 31 fewer deaths from consumption alone and a total of 71 fewer from the diseases specified than during the previous week.

INDIANA.

Hammond Hospital and Training School has been incorporated at Hammond by Dr. John C. Pannenborg and others, with a capital stock of $10,000.

Diphtheria is so prevalent at New Albany that the Board of Health has ordered the schools to be closed, and all public meetings to be interdicted. The disease has reappeared at Knox.

T[illegible] Fever.—There are 16 cases of typhoid fever at th [illegible] y, Jeffersonville, due in the opinion of the secretary of the State Board of Health to infected water supply.

Smallpox.—The situation at Mooerstown is improving rapidly.——Six cases have been reported from School District Number 1, Wabash Township, Adams County, and the public school in that district has been closed.

Medical License Cases.—Drs. W. F. Reinhardt and E. N. Flint, Indianapolis, have appealed from the decision of the

State Board, refusing them licenses.——Dr. George McD. Ober, Indianapolis, was arrested at Madison, October 11, for practicing without a license.——The Appellate court has modified its mandate in the action to revoke the physician's license held by Dr. Jacob B. Oliver, Brazil, so as to direct that a new trial be granted and further proceedings be had not inconsistent with the recent decision of that court reversing a judgment in Dr. Oliver's favor.

Expelled.—At a meeting of the Knox County Medical Society at Vincennes, October 14, Dr. Thomas H. Maxedon was expelled from the Society on the allegation of unprofessional conduct. The charges on which this action is based are that Dr. Maxedon sought notoriety in the newspapers; that he instituted suit against his fellow-practitioners, and that he recently gave improper testimony in a trial. Immediately after the expulsion, Dr. Joseph F. Somes resigned as a member of the Society. Dr. Maxedon claims that the action is summary, and that the charges are due to professional jealousy, and says that he will appeal for redress to the State Board.

Mortality in Indiana.—The reports to the State Board of Health for September show 2825 deaths, a rate of 13.6 per 1000 per annum. This is a decrease of 107 as compared with the preceding month and a decrease of 296 as compared with the corresponding month of 1900. All the cities in the State, with a population of 847,302, report 1052 deaths, which is a rate of 15.1 per 100,000. This exceeds the rate for the whole state by 1.5, and compared with the preceding months is a decrease in the rate of .4. The number of deaths classified according to important ages in the cities, was, under 1 year of age 221, 1 to 5, inclusive, 89, 65 and over 219. The country deaths numbered 1773, a rate of 12.9 per 100,000, which is 2.2 less than the city rate. The death rate from pulmonary tuberculosis in the country was 121.3, and for the cities 141.1 per 100,000. The typhoid rate for the country was 98.6, cities 76.3. The diphtheria rates, rural and urban, were 12.4 and 27.3 respectively. The diarrheal rates were, rural, 177.6; urban, 162.7; puerperal fever shows a rural rate of 2.9 and an urban rate of 4.3. This reverses the usual order. The cancer rate was, rural 46.7, urban, 59. Only in typhoid fever and diarrheal diseases does the rural rate exceed the urban. Tuberculosis caused the greatest number of deaths, 296; of these 264 were from pulmonary tuberculosis. The deaths from typhoid fever numbered 188; diarrheal diseases, 356; diphtheria, 36; scarlet fever, 4; whooping cough, 16; pneumonia, 73; cerebrospinal meningitis, 17; influenza, 4; puerperal fever, 7; cancer, 105, and violence, 113.

MARYLAND.

State Examination.—The State Board of Medical Examiners will hold the semi-annual examinations for license to practice medicine at the Medical Hall, Baltimore, November 6 to 9. The subjects are anatomy, physiology, surgery, hygiene, practice, pathology, chemistry, medical jurisprudence, materia medica, therapeutics, obstetrics and gynecology. A fee of $10 must accompany each application.

Baltimore.

Dr. Edmund G. Waters, while visiting a patient, October 18, fell down a stairway and fractured his left leg.

The mortality for the week ending October 19, was 177, or 17.77 per 1000 per annum. The white rate was exactly one-half of the black.

Yale's Bicentenary.—On October 22, at the bicentennial celebration of Yale University, Professor Wm. H. Welch, of this city, delivered an address on "Yale in Its Relation to Medicine," and Dr. Daniel C. Gilman, one on "Yale in Its Relation to Science and Letters."

Personal.—Dr. Jose L. Hirsh has returned from his wedding trip.——Dr. Charles E. Simon has returned from summering in Nova Scotia.——Dr. Jessie E. Sweet, who has completed a course at the Presbyterian Eye, Ear and Throat Charity Hospital, has returned to her home, Pine Bluff, Ark.

Detention Hospital.—Mr. Jeffrey R. Brackitt, president of the Board of Charities and Corrections, recommends the establishment of a temporary place of detention for emergency insane cases in the central part of the city. Attention was called to such a provision by the death of an insane patient shortly after being committed to jail last July.

St. Joseph's Hospital Annex.—The $30,000 annex to St. Joseph's Hospital will be opened November 5. The fund for its erection was raised by the Ladies' Auxiliary. It will accommodate about 75 patients, bringing the total capacity of the institution to 275. A steam laundry and a crematory for the burning of bandages, dressings, etc., have been installed. The addition will contain two negro wards and ten private rooms. It is in the rear of the main building.

Tablet to Professor Martin.—A large and beautifully framed bronze tablet to the memory of the late Professor Henry Newell Martin has been erected in the corridor of the biological laboratory at Johns Hopkins University. It bears this inscription: "In Commemoration of Henry Newell Martin of Neury, Ireland, A Graduate of the Universities of Cambridge and London, Fellow of the Royal Society, the First Professor of Biology and of Physiology in This University. By his brilliant work as investigator, teacher and author, he advanced knowledge and exerted a wide and enduring influence. Appointed in 1876. Resigned in 1893. Born in 1848. Died in 1898." A memorial meeting to the late Professor Henry A. Rowland, of the same institution, will be held in the physical laboratory, October 26, when Dr. T. C. Mendenhall, former president of the Worcester Polytechnic Institute, will make the address.

MASSACHUSETTS.

School Inspection in Worcester.—Dr. John T. Duggan, Worcester, chairman of the committee appointed to consider the matter of medical inspection in the public schools of that city, has asked for an appropriation of $3000 for that purpose.

West Roxbury Hospital.—Through the liberality of Abby L. A. Faulkner, Jamaica Plain, a hospital is to be erected and devoted to the care of the sick in the section of Boston known as the old town of West Roxbury. The buildings are to cost about $100,000.

Tuft's College Medical School.—The formal opening of the new medical and dental building of Tuft's College, Boston, took place October 3. President Elmer T. Capen, presided; Dr. Frederick W. Hamilton, chairman of the executive committee of the trustees, presented the building to the medical and dental faculties, and Dr. Harold Williams, dean of the schools, made the address of acceptance.

Personal.—Dr. Francis E. Corey, Westboro, has moved to Redlands, Cal.——Dr. Frank A. Foster, Waltham, has disposed of his practice and moved to Newton.——Dr. Leslie H. Hendee, Palmer, has moved to Westfield.——Dr. Homer Connor has opened an office in Haverhill.——Dr. Francis Shaw, Worcester, has located in Somerville.——Dr. and Mrs. Charles Hale Cogswell, Boston, intend to spend the winter in travel.

MICHIGAN.

Virchow.—The Detroit Medical Society has sent a congratulatory cablegram to Dr. Rudolph Virchow.

Smallpox Fees.—The Calhoun County Medical Society has fixed the fee for attending smallpox cases at $10 a visit.

Personal.—Dr. J. W. Toan, Otsego, has moved to Grand Rapids.——Dr. T. Bennett Scott, Vernon, has sold his practice to Dr. Louis Fleckenstein, Port Hope, who is now taking a post-graduate course in Chicago.

Card Catalogue of Graduates.—The secretary of the medical faculty of the University of Michigan, Dr. G. Carl Huber, has prepared a complete card catalogue of the alumni and alumnæ of the medical department.

Hospital Site Accepted.—The Hospital and Home Association of Port Huron has accepted Charles Baer's offer of a hospital site of three lots, and $1000 in cash toward the erection of a new hospital building. It will be necessary to raise $20,000 by popular subscription.

MINNESOTA.

Diphtheria is reported in St. Paul and Sletten.

Licensed to Practice.—The State Board of Medical Examiners, on October 11, issued licenses to practice to 19 candidates.

Swedish Hospital.—The cornerstone of the new Swedish Hospital, Minneapolis, was laid with appropriate ceremonies, October 6. The building is to be three stories high and will cost about $40,000.

Compulsory Vaccination.—Until the Supreme court decides otherwise, not a child will be admitted to the public schools of St. Paul until it has been furnished the required certificate of vaccination. This dictum of Dr. Justus Ohage is being combatted by the local anti-vaccination society. In St. Paul fully 2000 children are not attending school on account of failure to comply with the requirements of the Health Department.

Smallpox.—Smallpox exists at Slayton, Murray County, and at Gary, Norman County.—There have been many deaths among the Indians in Mille Lacs County.——The disease is reported among the scattering bands of non-reservation Indians who roam about the vicinity of Sandy Lake, north of Aitken and McGregor.—Six cases were reported in Minneapolis in a Polish settlement in one day.——Several cases have been reported at Pelican Rapids and the public schools at that place have been closed.

Owatonna Hospital.—The Owatonna Hospital Board has passed a resolution that each patient shall be furnished by his attending physician with a certificate of his condition, on a form to be furnished by the hospital board, which certificate shall be given to the superintendent upon admission to the said hospital; and that the said certificate shall show that at the time of admission the patient is not suffering from smallpox, diphtheria, measles, scarlet fever, or pulmonary tuberculosis, all which cases are barred from admission to the hospital.

Personal.—Dr. Joseph G. Skaro, Minneapolis, is critically ill with nervous exhaustion in a hospital in that city.——Dr. John R. Petersen, Madison, is taking a post-graduate course in Philadelphia.—Dr. George G. Eitel, Minneapolis, is studying in Berlin.——Dr. James B. White, Montgomery, is about to locate in Faribault.——Dr. Ernest Z. Wanous, Rochester, has returned from a month's trip to the Atlantic seaboard.——Dr. Devereaux, Minneapolis, has located in St. Cloud.——Dr. H. C. Stuhr, Crookston, has opened an office in McIntosh.——Dr. Frank C. Davis, Minneapolis, is taking post-graduate work in Berlin.

MISSOURI.

Epidemic Disease.—Smallpox is reported at Cawood and Kansas City; scarlet fever at Hartville, Springfield, Ozark and Billings, and diphtheria in Springfield.

Marion-Sims-Beaumont Laboratory.—The new laboratory of the Marion-Sims-Beaumont Medical College, St. Louis, is now ready for occupancy. Dr. Meade Bolton, of Johns Hopkins University, has been elected director of the laboratory.

Personal.—Dr. Charles B. Lawrence, Stet, has moved to Woolstock, Iowa.——Dr. John Powers, Urich, has located in Clinton.——Dr. Thomas J. Halsey, Triplett, Chariton County, has moved to Drexel.——Dr. R. S. Bennett, Drexel, will spend the winter in study in New York.

Dr. James A. Manahan, Kansas City, assistant city physician, who was summarily discharged by the mayor, a few days ago, claims that the mayor has no authority in the matter, and that only the city physician, Dr. George O. Coffin, has the right to discharge him. He accordingly reports for duty as usual.

Virchow Banquet.—On October 13, one hundred and ten physicians and scientists met at St. Louis, at a banquet held in honor of the eightieth birthday anniversary of Rudolph Virchow. Dr. Robert Luedeking presided. Addresses were delivered by Dr. Hugo Summa on "Rudolph Virchow"; by Dr. Willard Bartlett on "Virchow the Pathologist"; by Dr. Amand N. Ravold on "What Hygiene Owes to Virchow"; by Dr. Robert Terry on "Virchow's Work in Anthropology"; by Mr. Charles Nagel on "Virchow as a Public Man," and by Mr. Perry Post Taylor on "Medicine as a Cosmopolitan Science."

NEW JERSEY.

Diphtheria is prevalent in Bloomfield, where 18 cases have been reported, and Brookside school has been closed for fumigation.

The Lost Hospital.—Crawford had an isolation hospital last spring. It was a substantial wooden building, 22 by 22 by 10 feet. A few days ago the chairman of the Board of Health went to inspect the hospital and could find no trace of it.

Panic in Hospital.—Fire caused a panic in the Paterson General Hospital, October 8, which might have been attended with serious results but for the coolness displayed by the superintendent and nurses. The patients were promptly removed and the fire extinguished.

Hospital Changes.—Dr. Norman L. Rowe, whose term as house surgeon at Christ Hospital, Jersey City, expires November 18, will be succeeded by Dr. Souloff. Dr. Darling has been appointed ambulance surgeon.——Dr. W. J. Hickson, resident physician of the Atlantic City Hospital, has resigned.

Dr. D. Warren Poor, East Orange, has been appointed medical inspector of the Orange public schools. His duties consist in responding to the call of the superintendent, examining suspects, and if he finds them afflicted with an infectious or a contagious disease to send them home with instructions to consult a physician. It will not be his duty to treat the cases. For more than a year Dr. Edgar C. Seibert, president of the board, has been urging the necessity of inspection, and Dr. M. Herbert Simmons one of the commissioners, and Superintendent William M. Swingle have ably seconded his endeavors.

Endorsement of McKinley's Physicians.—Dr. Charles F. Lehlbach, Newark, secretary of the Practitioners' Club of that city, has transmitted the following preamble and resolutions: "The Practitioners' Club of Newark, N. J., at its regular session, October 7, 1901, desires to express its highest appreciation of the courage, skill and professional ability displayed by the physicians in attendance upon the late President William McKinley: Be it therefore resolved, that the club regrets exceedingly that so unjust, uncalled for, unfair and arrogant a criticism should be made as appeared in the *New York Medical Record* of September 21, and hereby expresses its indignation and disapprobation. The club resolves furthermore, that a copy of this resolution be forwarded to the publishers of the *Medical Record, American Medicine,* and The Journal of the American Medical Association.

NEW YORK.

Personal.—Dr. Myron W. Hunt, Holland Patent, has located in Canastota.——Dr. Charles B. Sprague, Pottersville, will take a course of post-graduate study in New York City.

Elmira Isolation Hospital.—The health authorities of Elmira are having difficulty in obtaining a site for their isolation hospital. There is urgent need for such an institution, as a few cases of smallpox still exist in the city.

To Enforce the Ordinance.—A crusade against delinquent physicians who fail to make official reports of the cases of pulmonary tuberculosis which they are called to attend has been decided on by the health bureau and law department officials of Rochester.

New Rochelle Hospital Troubles.—The medical staff of the hospital at New Rochelle has resigned because the board of governors has passed a resolution making their terms only one year. The ten leading physicians of that city formed the medical staff. They say it was agreed that once a physician was appointed to the staff he should enjoy a perpetual tenure of office.

New York City.

New Harlem Hospital.—The Board of Estimate has authorized a bond issue of $275,000 for the construction of a hospital in Lenox Avenue between 136th and 137th streets, to be known as the New Harlem Hospital.

Merchant Marine Hospital Service.—Dr. William T. Jenkins, who has been in Europe for six weeks, is organizing a Merchant Marine Hospital Service to afford medical service to foreign merchant seamen in New York and other ports.

New Woman's Hospital.—The new hospital which the trustees of the New York Medical College and Hospital for Women are erecting as an addition to the present building will probably not be completed before the first of next year. The building will cost $45,000, and all but $6,000 of this had been secured before the new hospital was begun. At present over $3,000 more has been collected. The new addition will contain eighty rooms, besides a large operating theater and other necessary offices.

New York School of Clinical Medicine.—A course of clinical lectures with demonstrations will be given at the New York School of Clinical Medicine, 328 West 42d St., on Tuesday evening, commencing October 22. Members of the medical profession are cordially invited. The following subjects will be considered in the autumn course: October 22,—"Various types of chronic endometritis and their treatment," by Dr. Augustin H. Goelet; October 29,—"Scalp wounds and cranial fractures," by Dr. Thomas H. Manley; November 5,—"Some new studies on delirium tremens and alcoholic toxemia, illustrated," by Dr. Thomas D. Crothers; November 12,—"The operative treatment of traumatic and pathological lesions of the joints," by Dr. Robert H. Cowan; November 19,—"Diseases of the naso-pharynx and their treatment," by Dr. Max J. Schwerd; November 26,—"Diseases of the testes and their investments," by Dr. Carl E. Pfister; December 3,—"How to measure, fit and adjust the corset for movable kidney," by Dr. A. E. Gallant; December 10,—"Treatment of chronic gastric catarrh," by Dr. Heinrich Stern, and December 17,—"Trachoma —granulated lids—and its treatment," by Dr. J. Albert Meek.

OHIO.

Cornerstone Laid.—The cornerstone of the addition to St. Elizabeth's Hospital, Dayton, was laid with appropriate ceremonies, October 4.

Isolation Hospital.—The new smallpox hospital at Cleveland, two stories high and with four wards accommodating 80 patients and 8 private rooms, is ready.

Hospital Ward Donated.—Miss Sadie Tod, Youngstown, has notified the trustees of the City Hospital, Warren, that she will donate and equip a ward in the new hospital.

Fountain Park Sanatorium.—Drs. George W. Pickering and Robert Henderson, Urbana, have taken charge of the large hotel building at Fountain Park and will convert it into a sanatorium.

Dr. George W. Crile, Cleveland, has been awarded the Alvarenga Prize for 1901, for his essay entitled "An Experimental and Clinical Research into Certain Problems Relating to Surgical Operations."

Dr. Albert P. Ohlmacher, who recently left Gallipolis for Chicago, has been appointed non-resident director of the pathological laboratory of the Ohio Hospital for Epileptics, Gallipolis, and Dr. Theodore L. Chadbourne, at present assistant physician, was promoted to the position of resident pathologist.

Cleveland City Bacteriologist.—Dr. George C. Ashmun, Cleveland, has introduced an ordinance in the city council providing for the appointment of a city bacteriologist at a salary of $1500 per year, who shall work in conjunction with the health office, and who shall furnish trustworthy information respecting the purity and impurity of air, water, and all food substances, and for the prompt detection and prevention of dangerous infectious diseases.

Communicable Diseases.—Diphtheria is reported at Findlay, Cambridge and Zanesville.——Dresden, McConnelsville, Marietta and Cumberland have quarantined against Zanesville on account of the disease.——Smallpox has appeared at Newark, Zanesville and Chatham, and 12 cases are reported at Clay Lick.——Scarlet fever is increasing in Columbus, and the schools of Amanda have been closed on account of the prevalence of the disease at that place.

Personal.—Dr. Peyton E. Cromer, Piqua, has moved to Emporia, Kan.——Dr. Harry B. Kurtz, Leetonia, has located in Elkhart, Ind.——Dr. Yost, Lorain, has decided to locate in St. Paul, Minn.——Dr. Starling S. Wilcox, acting assistant surgeon, U. S. Army, has resigned and resumed practice in Columbus.——Dr. and Mrs. Thomas M. Sabin, Warren, have returned from a trip to Las Vegas, N. M.——Dr. P. R. Bennett, Urbana, has moved to Daytona, Fla.——Dr. William M. Lottridge, Portsmouth, intends to move to Newport, Ky.——Dr. S. D. Good, Newton Falls, has disposed of his practice and will take post-graduate work in New York and Chicago.——Dr. John R. Pipes, Cleveland, has located in Urbana.——Dr. George N. Simpson, Warren, has opened an office in Youngstown.

Fire at Gallipolis Hospital.—During the night of October 15, the pathological laboratory of the Ohio Hospital for Epileptics, Gallipolis, was totally destroyed by fire of unknown origin. Along with the destruction of a splendid equipment for pathologic research a more deplorable loss was sustained in the material which had been accumulated for four years by Dr. A. P. Ohlmacher, director of the laboratory, a material obtained from 176 thorough postmortem examinations of epileptics and including this number of epileptic brains, representing most if not all the phases of the morbid anatomy of the disease. These brains were all properly preserved and in good condition for future study, and numbered among them a remarkable series representing various types of epileptic idiocy and infantile cerebral paralysis. It is no exaggeration to say that this was the most complete and valuable collection of its kind in America. Dr. Ohlmacher's private collection of specimens of embryology, pathology and comparative anatomy was also destroyed.

Cincinnati.

The Laura Memorial Woman's Medical College has opened with a large initial enrolment of students.

St. Mary's Hospital.—At the October meeting of the staff of St. Mary's Hospital, Dr. Thomas Hays was elected to fill the vacancy occasioned by the death of Dr. T. P. White; Dr. H. Freudenberger was elected to the position of pathologist.

Higher Requirements.—The new state medical law requiring students of medicine to have an academic education before matriculating at the local colleges is causing a falling off in the sale of tickets for the clinics at the City Hospital. Heretofore about 250 tickets were sold annually, but this year only 166 have been taken out to date.

Personal.—Dr. Henry W. Bettman has been elected trustee to the Cincinnati Public Library in place of the late Dr. T. P. White.——Dr. Byron Stanton has been elected president of the State Board of Health, vice Dr. W. T. Gemmill, Forest, retired.——Dr. Daniel S. Young, one of the oldest and most esteemed local practitioners, is critically ill with pneumonia at the City Hospital.

PENNSYLVANIA.

West Penn Medical College, Pittsburg, opened for the year, October 2, with an unusually large attendance.

York Hospital.—The trustees of York Hospital are endeavoring to secure for the institution $4500 provided for in the act of assembly of 1874.

Reading Hospital Election.—On October 12, the managers of the Reading Hospital elected William B. Smith, president; Charles Rick, vice-president; Dr. Israel Cleaver, secretary, and P. R. Stetson, treasurer.

Epidemic Disease.—Diphtheria at Forestville has 12 cases.——Verona reports a dozen cases of typhoid and a large number of cases of diphtheria.——The schools of East Berlin, closed on account of diphtheria, have reopened.——Johnstown has 44 cases of scarlet fever, with 6 deaths.

Personal.—Dr. Benjamin H. Detwiler, Williamsport, was given a banquet by the profession of Williamsport and its vicinity, October 7, in honor of his seventieth birthday anniversary.——Dr. Levi F. Wagner, Pikesville, has moved to Reading.——Dr. Frederick E. Jenkins, Carbondale, has returned from the Philippines and is stationed at Fort Morgan, near Mobile, Ala.—Dr. Isaac Ohlman, Meadville, has decided to locate in Pittsburg.——Dr. John L. Wright, physician for the Pennsylvania Relief Association at Erie, has been transferred to Pittsburg.

Philadelphia.

Five Philadelphia hospitals receive $5000 each by the will of the late Thomas Elkinton of Philadelphia.

Smallpox.—This year there have been 287 cases of smallpox, with 36 deaths. Sixty new cases were reported during the last week and the municipal hospital now has more than 150 patients.

Personal.—Dr. S. Ashton Bonnaffon, of the Pennsylvania Relief Association, has been transferred to Erie.——Dr. Samuel McCullagh has resigned as resident physician of Girard College, and Dr. Henry G. Godfrey has been elected his successor.

Wills Hospital Changes.—Dr. William F. Norris has resigned after thirty years' service, as attending surgeon. Dr. John N. Kirk has been appointed resident physician, Dr. Paul J. Pontius, assistant surgeon, and Dr. George C. Harlan, consulting surgeon. Dr. William Zentmayer has been appointed attending surgeon, vice Dr. Norris, resigned.

CANADA.

G. M. McMicking, M.D., McGill, 1849, died, October 13, at his home in Toronto, aged 76. He practiced in Chippewa until 1867, and afterwards in Goderich for twenty-two years. He was a member of the legislature for twenty-two years.

Protestant Hospital for the Insane at Quebec.—The quarterly report of this hospital shows that 40 patients were admitted during that time, and that 13 had been discharged therefrom; 10 deaths occurred. The number at present undergoing treatment in this institution is 403.

Typhoid Among Troops.—Several of the officers and men of the Duke of York's Hussars, at Montreal, are suffering from attacks of typhoid fever. It is thought that the infection occurred at Quebec City, where the corps was participating in the arrival of the Duke and Duchess of Cornwall and York.

Canadian Nurses' Association.—The annual meeting of this Association was held in Montreal, on Tuesday evening, the 15th inst., Miss Rogers, the President, in the chair. The number of registrations reached 1034. During the present year the Association was incorporated by provincial charter.

Hotel Dieu Hospital, Montreal.—Hotel Dieu, the oldest hospital in the City of Montreal, has decided to establish a training school for nurses, so that hereafter French-Canadians and Catholics will not be dependent upon English institutions for trained nurses. The public will be appealed to for assistance in the project.

Personal.—Dr. Harry W. Spence, of Toronto, who has been taking a post-graduate course in England, has been successful in obtaining the degrees L.R.C.P. London, and M.R.C.S. England, and has been appointed surgeon on the steamer *Mombasa*, one of the British India Steamship Company's passenger steamers from London to Calcutta.

Correspondence.

Regarding Propagation.

Chicago, Oct. 8, 1901.

To the Editor:—In the discussion of Dr. George J. Englemann's interesting paper on the "Increasing Sterility of American Women," reported in The Journal for October 5, there are exhibited a depth of concern and a degree of alarm that do not seem to be warranted by those disclosures in the Doctor's paper which furnished the material for the greater part of the discussion.

The chief facts shown in the paper are, that sterility has increased rapidly during the last century; that the present average percentage of childless marriages in this country is about twenty; that the average number of children per married couple is 1.8, and that the chief causes of this increasing sterility and diminishing fecundity are the intentional prevention of conception and interruption of gestation.

These are intensely interesting facts, and the labor which their accumulation must have cost the author, entitles him to the highest praise. It may also be conceded without argument that the condemnation which the professional abortionist, the advertiser of abortifacients, and the male distributers of Neisser's diplococci, received at the hands of those who discussed the paper, was entirely just. But the mere facts that 20 per cent. of American marriages are childless, and that the number of children per married couple is only 1.8, do not seem to warrant the alarm that was exhibited in their discussion.

If these facts forebode a danger that constitutes sufficient grounds for alarm, this danger must be one which menaces either ourselves and our actual descendants, or those potential individuals of the future whose actual existence is prevented by our increasing infecundity. There can be no danger that threatens any one else.

What danger is there in these facts for us or our descendants? Would the struggle for existence be easier, or the joy of living greater, if there were more people in America or in the world? Is there any profession, trade, or calling that is not already enormously overcrowded? If we need more tillers of the soil, why has the exodus from the country to the town gone so swiftly forward that 47.1 per cent. of our present population is in incorporated towns and cities? If there is, on the other hand, a village, town, or city in America that needs more people than it has, why is it necessary for so great a part of the existing urban population to live in tenements (which, by courtesy, are called flats), and support families on $6.00 a week? Every new child born into the world is a prospective competitor of those already here. It must elbow its unwelcome way into an already overcrowded world, in which it will find no nook or corner fit to live in that is not already occupied, and no vocation from whose representatives it will receive a welcome. Let us be frank and admit that, for us and our descendants, there is encouragement rather than peril in the alleged diminution of our rate of increase.

Taking the other horn of the dilemma, we shall find it equally ridiculous to talk of doing missionary work in the interests of possible children that have never even begun to be. It is here assumed that a child "begins to be" at the moment of conception.

According to Henle's estimate, every woman produces 72,000 ova, each one of which is susceptible of fecundation and capable of development into a mature human being. Every one of these ova that fails to become fecundated becomes a dead human possibility. Should we endeavor to bring about the fecundation of all? If not of all, who shall decide how many?

Let us again be frank and admit that, until we shall have ameliorated the condition of the actually existent, we need not concern ourselves with the fate of these shadowy hosts of the merely potentially existent. We may go still further and insist that it is not necessary to countenance abortion, to be able to say that a marriage which is comparatively barren of children, may still be prolific of happiness, and that to make the propagation of the species the sole aim of marriage, is to degrade that institution to the spiritual level of a breeding farm.

Indeed, in normal cases, it is questionable whether the definite desire for children ever is a motive to marry. Love of the consort certainly long precedes the desire for children, and is a sufficient inducement to insure the perpetuation of the race. Desire for children comes later; for Nature has a way of accomplishing her mysterious purposes by appearing to let us do what pleases us, and then pleasing us with what she has enticed us into doing against our wishes.

A. C. McClanahan, M.D.

Book Notices.

Introduction to the Differential Diagnosis of the Separate Forms of Gallstone Disease, Based upon his own Experience Gained in 433 Laparotomies for Gallstones. By Professor Hans Kehr, Halberstadt. Authorized Translation by William Wotkyns Seymour, A.B. Yale, M.D. Harvard, Formerly Professor of Gynecology in the University of Vermont. (With an introduction by Prof. Kehr. Cloth. Pp. 370. Price, $2.50. Philadelphia: P. Blakiston's Sons & Co. 1901.

The literature of gallstone surgery in our language of late years has become quite considerable. Nevertheless, the addition of this translation from a leading German work on the subject will be of value to American readers. There is no question as to the importance of the subject and if the operative treatment of these conditions has not become so extensive in this country as it has in Germany, as hinted in the preface, the book will doubtless serve to bring about this desirable result. Professor Kehr has himself added a preface to this American edition in which he gives his views as revised from his latest experiences. In the selection of operative methods he employs cystectomy with drainage in this condition more and more. In this way he says we avoid more certainly true and false recurrences. Professor Seymour has given us an intelligent translation, but it contains a great many German constructions and can not be said to be quite as elegant English as it might be. Still, it is hard for a person who reads German much or little to avoid such slips occasionally in the translation of a language so difficult as German.

The Estivo-Autumnal (Remittent) Malarial Fevers. By Charles F. Craig, M.D. (Yale), Acting Assistant-Surgeon, U. S. A. Illustrated by 2 Colored Plates and 21 Clinical Charts. Cloth. Pp. 221. Price, $2.50. New York: William Wood & Co. 1901.

The author has given us in detail a description of certain fevers too little understood by the great mass of the profession. The opportunity presented to him while he was connected with military hospitals at home as well as in Cuba and the Philippines, was well utilized in a systematic and scientific study of the malarial diseases in their protean aspects, the result of which is published in this volume. He gives us an account of the estivo-autumnal parasites, describes them, giving their natural history, or life cycle within the mosquito, their varieties, method of staining, examination, etc. The etiology, pathology, diagnosis, prognosis, treatment, methods of infection, etc., of malaria are fully considered. The book is a most interesting addition to the literature on the subject and will be found invaluable to those who are desirous of understanding and thoroughly mastering the facts in regard to malaria. The manner in which the author has presented the subject is commendable in that it is simple yet scientific.

Manual of the Diseases of Children. By John Madison Taylor, A.M., M.D., Professor of Diseases of Children, Philadelphia Polyclinic, and William H. Wells, M.D., Adjunct Professor of Obstetrics and Diseases of Infancy in the Philadelphia Polyclinic. Second Edition, Thoroughly Revised and Enlarged. Illustrated. Cloth. Pp. 859. Price, $4.50. Philadelphia: P. Blakiston's Son & Co. 1901.

The authors have thoroughly rewritten their work, adding a number of new chapters and special articles. One of the points

Montreal General Hospital.—The governors of this institution have declined an offer of $25,000 for twenty thousand feet of land adjoining the present site of the General Hospital. Dr. J. B. McConnell presented the report of the management committee. The receipts from May 15 to October 9, amounted to $5015, and the expenditure $5719. The debt remains about the same as at the annual meeting, viz., $7948.

School Children and Vaccination.—The officials of the Health Department of Montreal are making special efforts to ascertain if pupils attending the public schools are being properly vaccinated, owing to the appearance once more in that city of the dread disease, and also on account of there being so many cases of smallpox in the province. As vaccination is not compulsory in the Province of Quebec, an effort will be made when the legislature meets to make it so.

Conference on Smallpox.—Dr. P. H. Bryce, secretary of the Ontario Board of Health, and Dr. Pelletier, secretary of the Quebec Board of Health, held a conference with the local board of health, at Ottawa, on the 14th inst., with regard to the epidemic of smallpox in that city. It is a noteworthy fact that out of the first twenty-four cases of smallpox reported, but one had previously been vaccinated. There have been thirty-four cases in all; the outbreak is now well under control.

Failure of the Physicians' and Surgeons' Supply Company.—Some months ago mention was made in these columns of the formation in Ontario of a supply company of the above description for practitioners in this province. It was thought at the time the association was organized that physicians were not receiving fair treatment at the hands of the drug trade. The organization was perfected in November last; the company began business in March of the present year. A directorate of physicians controlled the affairs of the company, which is now being wound up.

Medical Graduates and the Army.—Cable dispatches record that a Canadian medical graduate has been refused permission to serve on the British Medical Staff in South Africa; and the action of the home authorities in this connection is raising in the minds of military surgeons the question: What has become of the promised imperial legislation to permit duly qualified and certificated graduates of colonial medical colleges to enter the imperial service? Some months ago the Militia Department at Ottawa was notified that an act of this character had been introduced into the imperial parliament, but since that time nothing more has been heard of the matter; and it is not known whether the promised legislation passed into law or was thought to be a too generous concession to colonial medical graduates.

FOREIGN.

Plague at Rio Janeiro.—Two new cases of bubonic plague were found October 19, and three on the 20th, making 52 cases at the present time in the hospital.

Physician Contracts Leprosy.—Dr. Feilberg, city physician of Copenhagen, has contracted anesthetic leprosy. He had recently visited the West Indies.

Leper Hospital in Iceland.—The Order of Odd Fellows in Denmark established the Laugarnoes Hospital for lepers, October, 1898. At the end of 1899, 81 patients had been received, of which 18 are dead, and 2 have been discharged as cured.

The International Congress for Obstetrics and Gynecology will be held in Italy in 1902. The Russians have made great efforts to secure the congress in honor of the completion of the Academy for Obstetrics and Gynecology at St. Petersburg, the only institution of its kind in the world, our foreign exchanges assert. It has been erected under Ott's supervision by funds supplied by the Czar. The congress committee, however, had already made arrangements for the meeting in Italy. The first congress was held in Brussels, the second in Geneva and the third in Amsterdam.

International Congress of Tropical Diseases.—The Egyptian Medical Congress announced to convene at Cairo in December, 1902, will be practically a congress of tropical diseases, and the committee in charge would be glad to enlarge its scope and announce it as an international congress for this purpose. The realization of this project, however, they know depends on the co-operation of those interested in epidemiology and tropical pathology the world over, and they scarcely venture to hope for this. The list of communications already announced includes studies of the diseases, etc., prevalent in Egypt and Ethiopia, divided into three sections, medicine, surgery and ophthalmology.

PARIS LETTER.

President McKinley's death has been the cause of various comments on the part of the medical and political press in France. There has been quite a diversity of opinion shown, and it would seem as if the political newspapers had tried to cast doubts upon the manner in which the treatment was carried out. Certain medical men, hiding behind a pseudonym, and signing themselves with an X., have given forth views which showed their lack of appreciation of the difficulties to be encountered in the treatment of so desperate an injury. On the other hand, in the medical papers of good standing, the quickness with which a decision was come to has been much praised, and it has been repeatedly said that nowhere but in America such ready adaptability to the requirements of the time could have been found. There was, however, one fact, which impressed all medical men having some knowledge of the course observed in penetrating wounds of the abdomen, and that was the highly optimistic tendency of the bulletins issued.

Rabies.

The last statistics of the Pasteur Institute show how beneficial the treatment of rabies by inoculation has become. According to Tardieu, Thamhayn and Bouley, out of 855 cases of people bitten by mad dogs and who were not treated, death took place in 46.6 per cent. of the cases. The physicians of Alfort, Toulouse, Lyons and Berlin consider that about a third of the patients bitten by animals suffering from rabies are affected later with hydrophobia. On the other hand, in 1886, the first year the new treatment was tried, 2671 patients were inoculated at the Pasteur Institute and only 25 died, which makes a percentage of 0.94 per cent. In the last three years, 1898, 1899, 1900, 4499 persons were treated by this method and only 11 died, which makes the very low record of 0.25 per cent. Roux and Nocard's researches have shown that if, after three or four days, the dog suspected of rabies has shown no specific symptoms, the person who has been bitten is running no danger of infection. The disease itself runs a course of 10 days, so this is a means of making the diagnosis.

Epidemic of Smallpox.

Dr. Roger, physician of the Aubervilliers smallpox hospital, has just published the statistics of the cases of smallpox in Paris during the first six months of the year. There were in all 1996 cases with 274 deaths. There were over a hundred cases in the 20th and 23d week. Certain parts of Paris have been singularly free from the epidemic, such as the Champs-Elysées quarter where there were only 23 cases. The neighborhood of hospitals seems to be particularly disadvantageous, the two quarters around the Aubervilliers and the Pasteur Hospital having the greatest number of cases, 258 and 360. The mortality in Dr. Roger's service is 24 per cent., which is rather large. There seems to be at present a smaller number of cases, but Dr. Roger does not consider that the epidemic is over and he recommends vaccination every three years, as numerous facts collected during the recent epidemic show that the immunity is of much shorter duration than was at first imagined.

Congress of Gynecology and Obstetrics.

At the recent Congress of Gynecology and Obstetrics held at Nantes, Dr. Baudron of Paris spoke of the method he used, which consists in simple dilatation, in cases of uterine anteflexion with dysmenorrhea and sterility. He compared it to the other methods used, such as hysterotomy or ventrofixation.

Dr. Varnier made a report on the treatment of uterine rupture and described the results obtained by the old methods, such as extraction of the child and tamponing, and others obtained of recent date by laparotomy. The latter are much better and Dr. Varnier said that it was hard to decide after manual examination per vaginam, if rupture was complete or incomplete. The best course to follow was immediate laparotomy. Professor Pinaud insisted on the dangers of uterine rupture; some cases did not seem at first so alarming. He advocated immediate laparotomy in all cases. Dr. Pinaud also spoke on the use of aniodol as an antiseptic. He has been using it extensively in his service at the Clinique Baudelocque, and has found that it can be used in washing the eyes of the newborn infants.

Artificial Horse Bites.—A French exchange states that a new means of defrauding the public has recently been discovered in Paris. An instrument was made which produced a wound resembling the bite of a horse and damages were claimed from the owner of the horse incriminated as the assailant.

Correspondence.

Regarding Propagation.

Chicago, Oct. 8, 1901.

To the Editor:—In the discussion of Dr. George J. Englemann's interesting paper on the "Increasing Sterility of American Women," reported in The Journal for October 5, there are exhibited a depth of concern and a degree of alarm that do not seem to be warranted by those disclosures in the Doctor's paper which furnished the material for the greater part of the discussion.

The chief facts shown in the paper are, that sterility has increased rapidly during the last century; that the present average percentage of childless marriages in this country is about twenty; that the average number of children per married couple is 1.8, and that the chief causes of this increasing sterility and diminishing fecundity are the intentional prevention of conception and interruption of gestation.

These are intensely interesting facts, and the labor which their accumulation must have cost the author, entitles him to the highest praise. It may also be conceded without argument that the condemnation which the professional abortionist, the advertiser of abortifacients, and the male distributers of Neisser's diplococci, received at the hands of those who discussed the paper, was entirely just. But the mere facts that 20 per cent. of American marriages are childless, and that the number of children per married couple is only 1.8, do not seem to warrant the alarm that was exhibited in their discussion.

If these facts forebode a danger that constitutes sufficient grounds for alarm, this danger must be one which menaces either ourselves and our actual descendants, or those potential individuals of the future whose actual existence is prevented by our increasing infecundity. There can be no danger that threatens any one else.

What danger is there in these facts for us or our descendants? Would the struggle for existence be easier, or the joy of living greater, if there were more people in America or in the world? Is there any profession, trade, or calling that is not already enormously overcrowded? If we need more tillers of the soil, why has the exodus from the country to the town gone so swiftly forward that 47.1 per cent. of our present population is in incorporated towns and cities? If there is, on the other hand, a village, town, or city in America that needs more people than it has, why is it necessary for so great a part of the existing urban population to live in tenements (which, by courtesy, are called flats), and support families on $6.00 a week? Every new child born into the world is a prospective competitor of those already here. It must elbow its unwelcome way into an already overcrowded world. in which it will find no nook or corner fit to live in that is not already occupied, and no vocation from whose representatives it will receive a welcome. Let us be frank and admit that, for us and our descendants, there is encouragement rather than peril in the alleged diminution of our rate of increase.

Taking the other horn of the dilemma, we shall find it equally ridiculous to talk of doing missionary work in the interests of possible children that have never even begun to be. It is here assumed that a child "begins to be" at the moment of conception.

According to Henle's estimate, every woman produces 72,000 ova, each one of which is susceptible of fecundation and capable of development into a mature human being. Every one of these ova that fails to become fecundated becomes a dead human possibility. Should we endeavor to bring about the fecundation of all? If not of all, who shall decide how many?

Let us again be frank and admit that, until we shall have ameliorated the condition of the actually existent, we need not concern ourselves with the fate of these shadowy hosts of the merely potentially existent. We may go still further and insist that it is not necessary to countenance abortion, to be able to say that a marriage which is comparatively barren of children, may still be prolific of happiness, and that to make the propagation of the species the sole aim of marriage, is to degrade that institution to the spiritual level of a breeding farm.

Indeed, in normal cases, it is questionable whether the definite desire for children ever is a motive to marry. Love of the consort certainly long precedes the desire for children, and is a sufficient inducement to insure the perpetuation of the race. Desire for children comes later; for Nature has a way of accomplishing her mysterious purposes by appearing to let us do what pleases us, and then pleasing us with what she has enticed us into doing against our wishes.

A. C. McClanahan, M.D.

Book Notices.

Introduction to the Differential Diagnosis of the Separate Forms of Gallstone Disease, Based upon his own Experience Gained in 433 Laparotomies for Gallstones. By Professor Hans Kehr, Halberstadt. Authorized Translation by William Wotkyns Seymour, A.B. Yale, M.D. Harvard, Formerly Professor of Gynecology in the University of Vermont. With an introduction by Prof. Kehr. Cloth. Pp. 370. Price, $2.50. Philadelphia: P. Blakiston's Sons & Co. 1901.

The literature of gallstone surgery in our language of late years has become quite considerable. Nevertheless, the addition of this translation from a leading German work on the subject will be of value to American readers. There is no question as to the importance of the subject and if the operative treatment of these conditions has not become so extensive in this country as it has in Germany, as hinted in the preface, the book will doubtless serve to bring about this desirable result. Professor Kehr has himself added a preface to this American edition in which he gives his views as revised from his latest experiences. In the selection of operative methods he employs cystectomy with drainage in this condition more and more. In this way he says we avoid more certainly true and false recurrences. Professor Seymour has given us an intelligent translation, but it contains a great many German constructions and can not be said to be quite as elegant English as it might be. Still, it is hard for a person who reads German much or little to avoid such slips occasionally in the translation of a language so difficult as German.

The Estivo-Autumnal (Remittent) Malarial Fevers. By Charles F. Craig, M.D. (Yale), Acting Assistant-Surgeon, U. S. A. Illustrated by 2 Colored Plates and 21 Clinical Charts. Cloth. Pp. 221. Price, $2.50. New York: William Wood & Co. 1901.

The author has given us in detail a description of certain fevers too little understood by the great mass of the profession. The opportunity presented to him while he was connected with military hospitals at home as well as in Cuba and the Philippines, was well utilized in a systematic and scientific study of the malarial diseases in their protean aspects, the result of which is published in this volume. He gives us an account of the estivo-autumnal parasites, describes them, giving their natural history, or life cycle within the mosquito, their varieties, method of staining, examination, etc. The etiology, pathology, diagnosis, prognosis, treatment, methods of infection, etc., of malaria are fully considered. The book is a most interesting addition to the literature on the subject and will be found invaluable to those who are desirous of understanding and thoroughly mastering the facts in regard to malaria. The manner in which the author has presented the subject is commendable in that it is simple yet scientific.

Manual of the Diseases of Children. By John Madison Taylor, A.M., M.D., Professor of Diseases of Children, Philadelphia Polyclinic, and William H. Wells, M.D., Adjunct Professor of Obstetrics and Diseases of Infancy in the Philadelphia Polyclinic. Second Edition, Thoroughly Revised and Enlarged. Illustrated. Cloth. Pp. 859. Price, $4.50. Philadelphia: P. Blakiston's Son & Co. 1901.

The authors have thoroughly rewritten their work, adding a number of new chapters and special articles. One of the points in which it will be found up to date is that of infant feeding, and still other matters are also well brought up. Much new matter has been added to the portions on diseases of the nervous system and respiratory disorders. A chapter on ear diseases, which is a very important matter in children, has been added.

Deaths and Obituaries.

J. G. Kerr, M.D., Jefferson Medical College, Philadelphia, 1847, who was one of the best known medical missionaries in China, died at his home in Canton, China, aged 77. He was born in Adams County, Ohio, and for a time practiced in this country, but the past forty-five years he had devoted to his work among the Chinese. He was eminent as an operator for urinary calculi, and in 1898 was called to operate upon the American Minister to China. During the last few years he established and superintended an asylum for the insane, something previously unknown in that country. He also accomplished much in his translations of medical works into Chinese for the use of the students.

Philip Goode Gillett, M.D., for many years superintendent of the Illinois Institution for the Education of Deaf Mutes, died at his home in Jacksonville, Ill., October 2, aged 67. He was connected with the above institution in a minor capacity during his student days and became interested in deaf mute work and devoted all his energies in that direction. He was the first to introduce instruction in articulation and lip reading in a state institution, and he brought about the establishment of the Illinois State Board of Charities.

George W. Burke, M.D., Jefferson Medical College, Philadelphia, 1866, died at his home in New Castle, Ind., October 18, from Bright's disease, aged 59. During the Civil war he was an assistant surgeon in the 46th Pennsylvania and later in the 20th Army Corps, serving until the close of the war. He practiced for a time at Sulphur Springs, Ind., but for the past thirty-five years had practiced at New Castle. He was a member of the American Medical Association.

Charles H. Brown, M.D., University of the City of New York, 1879, died at his home in New York City, October 15, aged 45. He was for many years the managing editor of *The Journal of Nervous and Mental Diseases* and was connected with the New York Dispensary, the Post-Graduate and the Presbyterian hospitals, and the outdoor work of Bellevue Hospital.

Donald R. Hinckley, M.D., Harvard Medical School, Boston, 1896, shot and killed himself, probably accidentally, while visiting his parents at Northampton, Mass., October 14. He was a graduate of Yale University in the class of '92, and had been in active practice at New Haven, Conn., having recently been appointed instructor in the Yale Medical School. He was aged 31.

Joseph H. Wythe, M.D., Philadelphia College of Medicine and Surgery, 1850, died at his home in Oakland, Cal., October 14, after a long illness, aged 79. He was born in Manchester, England, and during the Civil war was assistant surgeon. He remained in the army for a number of years after the close of the war, and, after resigning his commission, studied for the ministry.

Robert Henry Nesbitt, M.D., College of Physicians and Surgeons, New York, 1899, died, October 10, at the New York Hospital of which he was once an interne. He had just returned from Europe when he was seized with his fatal illness, a strangulation of the intestine. His home was at Wheeling, W. Va.

Hiram P. Tuttle, M.D., University of California, 1869, died at Tacoma, Wash., October 9. He retired in 1898 in order to devote his entire time to the perfection of thorite, a high explosive, for the purchase of which Congress had made an appropriation at its last session.

Horace Bigelow, M.D., College of Physicians and Surgeons, New York, 1896, died in Roosevelt Hospital, October 15, from typhoid pneumonia, aged 28. He was born in Fayetteville, N. Y., and at the time of his death was a member of the outdoor staff of the hospital named.

Henry Raymond Rogers, M.D., Jefferson Medical College, Philadelphia, 1851, died at his home in Dunkirk, N. Y., October 19, aged 79. He retired from practice several years ago for scientific and literary work. As a writer he was noted for his original views.

Porter W. Felt, M.D., Detroit College of Medicine, 1882, died at his home in Belleville, Mich., where he had practiced for the past twenty years, October 12, from the result of an overdose of morphin, taken, it is believed, by accident. He was aged 44.

William W. Duval, M.D., University of Maryland, Baltimore, 1843, died at his residence, Gladswood, Prince George County, Md., October 13, aged 80. He was president of the county school board and identified for forty years with public education.

Hannah E. Longshore, M.D., Woman's Medical College, Pennsylvania, 1851, died in Philadelphia, October 18, aged 82. She was the first woman to practice medicine in the city named and served as a demonstrator of anatomy.

William G. Fisher, M.D., Medical Department Washington University, St. Louis, 1866, died at his home in Marshall, Mo., October 9, aged 57. He practiced for a number of years at Napton, Mo., moving to Marshall in 1896.

Herbert J. Hale, M.D., Detroit Medical College, 1875, died at his home in Grass Lake, Mich., October 3. At its recent meeting the Jackson County (Mich.) Medical Society passed resolutions of respect for his memory.

John Semple, M.D., Jefferson Medical College, Philadelphia, 1848, died at his home in Wilkinsburg, Pa., October 9, after an illness of two weeks, aged 80. He was burgess of Wilkinsburg from 1888 to 1890.

Frederick Loeber, M.D., New Orleans School of Medicine, 1866, died at his home in New Orleans, October 18, aged 63. He was for thirty-one years the head of the Touro Infirmary and was a prominent physician.

Samuel Edward Stiles, M.D., Long Island College Hospital, New York, 1870, died in Brooklyn, N. Y., October 9, aged 67. He was a noted genealogist and retired from active practice some years ago.

Wesley A. Vineyard, M.D., Tennessee Medical College, Knoxville, 1890, died at his home in Luttrell, Tenn., October 9, from heart failure, aged 41. He was a representative to the Legislature in 1900.

Edwin T. Edgerton, M.D., Pennsylvania Medical College, Philadelphia, 1851, died at his home in Saline, La., October 14, from the effects of a cancer, aged 75. He was a native of South Carolina.

Chester L. Gross, M.D., Jefferson Medical College, Philadelphia, 1861, died suddenly at his home in Pen Argyl, Pa., October 9, aged 65. He formerly practiced at Freemansburg.

Ernest Schottky, M.D., College of Physicians and Surgeons, New York, died at his home in Passaic, N. J., October 18, aged 56. He at one time resided in New York City.

William L. Harding, M.D., New York University, 1860, died at his home in New York City, October 11. He was a surgeon in the Union army during the Civil war.

Charles W. Lawrence, Jr., M.D., University of Tulane, New Orleans, 1900, died at his home in Longview, Texas, from typhoid fever, October 4.

J. H. Tabler, M.D., University of Tennessee, Nashville, 1892, died at his home in Lawrenceburg, Tenn., October 13, after a brief illness.

Jefferson M. Mason, M.D., University of Arkansas, Little Rock, 1888, died at his in Floresville, Texas, October 12, after a long illness.

W. A. Withers, M.D., Rush Medical College, Chicago, 1898, died at his home in New Orleans, October 14, after a long illness.

Societies.

COMING MEETINGS.

Medical Society of Virginia, Lynchburg, Nov. 5-7, 1901.

Oklahoma Territory Medical Association, Oklahoma City, Nov. 13, 1901.

Southern Surgical and Gynecological Association, Richmond, Va., Nov. 12-14, 1901.

Western Surgical and Gynecological Association, Chicago, Dec. 18-19, 1901.

Southern California Medical Society will meet at Los Angeles, December 4 and 5.

Central Medical Association.—At a meeting of this Association, held at Middletown, Conn., October 7, it was voted to retain the same officers for the coming year.

Holyoke (Mass.) Medical Society.—This Society met October 7 and elected Dr. C. A. Allen, president, Dr. D. F. Donoghue, vice-president, and Dr. J. J. McCabe, secretary-treasurer.

Inland Empire Clinical Society.—This Society was recently recognized by and affiliated with the Idaho State Society, thus giving the former the full privileges of a country or district medical association.

Guthrie (Okla.) Medical Society.—At a meeting of this Society, October 7, the following officers were elected: Dr. R. V. Smith, president; Dr. J. L. Melvin, vice-president, and Dr. E. O. Barker, secretary-treasurer.

Idaho State Medical Society.—The ninth annual meeting of this Society was held at Pocatello, October 3 and 4, and Dr. Hubert A. Castle, Pocatello, was elected president, and Dr. Ed. E. Maxey, Caldwell, re-elected secretary-treasurer.

Southern Manitoba Medical Society.—This Society was organized at Napinka, October 9, and the following officers elected: President, Dr. E. J. McConnell, Morden; vice-president, Dr. Frederick L. Schaffner, Boissevan, and secretary-treasurer, Dr. T. J. Lamont, Treherne.

Detroit (Mich.) Academy of Medicine.—The regular meeting of this Academy was held, October 8, and Dr. Arthur D. Holmes was re-elected to the presidency; other officers elected were Dr. Wadsworth Warren, vice-president, and Dr. Harrison D. Jenks, secretary-treasurer.

McKean County (Pa.) Medical Society.—At the meeting of this Society held in Bradford, October 8, the officers elected were as follows: Dr. William P. Burdick, Mt. Jewett, president; Dr. James C. Walker, Bradford, vice-president, and Dr. B. H. Hall, Bradford, secretary-treasurer.

Stafford District (N. H.) Medical Society.—The ninety-fourth annual meeting of this Society was held at Dover, October 9, and the following officers elected: President, Dr. William H. Nute, Exeter; secretary, Dr. Lewis W. Flanders, Dover, and treasurer, Dr. John R. Ham, Dover.

White County (Ill.) Medical Association.—At the regular meeting of this Association, at Grayville, October 15, the following officers were elected: President, Dr. V. H. Parker, Grayville; vice-presidents, Drs. J. N. Hopkins, Burnt Prairie, and I. A. Foster, Herald; secretary-treasurer, Dr. W. A. Steele.

Fergus County (Mont.) Medical Association.—This Association was recently permanently organized with the following officers: President, Dr. J. B. Atchison, Lewiston; vice-president, Dr. W. A. Long, Lewiston; secretary, Dr. Frederick Treacy, Lewiston, and treasurer, Dr. C. A. Tillotson, Gilt Edge.

Jackson County (Mo.) Medical Society.—At the meeting of this Society, held in Kansas City, October 10, the following officers were elected: President, Dr. William Frick; vice-president, Dr. Walter S. Wheeler; secretary, Dr. Edward H. Thrailkill, and treasurer, Dr. Louis W. Luscher, all of Kansas City.

El Paso County (Texas) Medical Society.—At the third annual meeting of this Society, at El Paso, October 12, the following officers were elected: President, Dr. S. T. Turner; vice-president, Dr. W. N. Vilas; secretary, Dr. J. A. Rawlings (re-elected), and treasurer, Dr. H. E. Stevenson (re-elected), all of El Paso.

Corsicana (Texas) District Medical Association.—At the regular meeting of this Association, October 8, the following officers were elected: President, Dr. T. A. Miller; vice-presidents, Drs. T. L. Slater, Re, and M. L. Langford, Corsicana; secretary, Dr. W. D. Fountain, and treasurer, Dr. L. E. Retton, both of Corsicana.

Tennessee Valley Medical Association.—This Association met at Athens, Ala., October 8 and 9, and elected the following officers: President, Dr. Felix E. Baldridge, Huntsville; vice-presidents, Drs. F. P. Pettey, New Decatur, and T. E. Casey, Albertsville; secretary, Dr. Thomas E. Dryer, Huntsville, and treasurer, Dr. Edgar Rand, Huntsville.

Cedar Falls (Iowa) Medical Society.—The annual meeting of this Society was held at Cedar Falls, October 8 and 9, and the following officers were elected: President, Dr. George B. Thompson, Winthrop; vice-president, D. M. Wick, Cedar Falls; secretary, Dr. T. U. McManus, Waterloo, and treasurer, Dr. R. E. Buchanan. The next meeting will be held in Waverly.

Jefferson County (Tenn.) Medical Society.—The physicians of this county met October 8 and reorganized this Society, which has been dormant for the past twenty years. The following officers were elected: Dr. I. M. Tittsworth, Jefferson City, president; Dr. C. L. Cline, White Pine, vice-president; Dr. S. W. Fain, secretary, and Dr. P. A. Tinsley, Dandridge, treasurer.

Medical Association of Northern New York.—At the meeting of this Association held at Plattsburg, October 8, the following officers were elected: President, Dr. Frank Madden, Plattsburg; vice-president, Dr. Walter S. Daly, Ogdensburg; treasurer, Dr. George H. Oliver Dickinson, and secretary, Dr. Alfred G. Wilding, Malone. Dr. Cassius D. Silver, Plattsburg, was elected delegate to the State Medical Association.

Albany County (N. Y.) Medical Association.—The members of the Second District Branch residing in Albany County met, October 9, and organized this Association, electing the following officers: President, Dr. Charles M. Culver, Albany; vice-president, Dr. Adam T. Van Vraken, Watervliet; secretary-treasurer, Dr. William B. Sabin, Watervliet; fellow, Dr. W. R. Lothridge, Verdoy, and alternate, Dr. John U. Haynes, Cohoes.

Tri-State Medical Society.—This Society, representing the states of Alabama, Georgia and Tennessee, met at Nashville, October 8, 9 and 10, and the following officers were elected: President, Dr. John C. LeGrand, Birmingham; vice-presidents, Drs. Pugh U. Brown, Troy, Ala., William P. Harbin, Rome, Ga., and James C. Wilson, Rockwood, Tenn.; secretary, Dr. Frank T. Smith, and treasurer, Dr. George R. West, both of Chattanooga. The next place of meeting is Birmingham, Ala.

San Joaquin Valley Medical Association.—At the annual meeting of this Association, held in Stockton, Cal., October 8, the following officers were elected: President, Dr. Henry Hildreth, Delano; vice-presidents, Drs. B. F. Surrhayne, Modesto, J. L. Carson, Bakersfield, and J. B. Rosson, Tulare; secretary, Dr. W. S. Fowler, Bakersfield; assistant secretary, Dr. D. B. Trowbridge, Fresno, and treasurer, Dr. T. M. Hayden, Fresno. The next meeting will be held in Fresno, the second Tuesday in March, 1902.

Wyoming State Medical Society.—The fifth annual meeting of this Society was held at Evanston, October 8 and 9, and the following officers were elected: President, Dr. G. G. Verbryck, Cambria; vice-presidents, Drs. F. H. Harrison, Evanston, W. C. Burk, Rock Springs, and W. A. Wyman, Cheyenne; secretary, Dr. C. H. Solier, Evanston; treasurer, Dr. J. L. Wicks, Evanston; delegate to the American Medical Association, Dr. R. Harvey Reed, Rock Springs; alternate, Dr. E. E. Lewis, Spring Valley. The next place of meeting was fixed for Cheyenne in joint session with the Rocky Mountain Interstate Medical Association.

Vermont State Medical Association.—The eighty-eighth annual meeting of this Association was held in Montpelier, October 10 and 11, and it was voted unanimously to reorganize on a basis of the county medical societies, that is, to establish in each county a society in affiliation with the State Association; a committee of three, consisting of Drs. D. C. Hawley, Burlington, J. M. Hamilton, Rutland, and W. D. Huntington, Rochester, was appointed to complete the organization throughout the state, and were empowered to employ one of their own number or any other member in good standing as organizer to visit the various counties. The following officers were elected for the coming year: President, Dr. J. B. Wheeler, Burlington; vice-president, Dr. M. F. McGuire, Montpelier; secretary, Dr. G. H. Gorham, Bellows Falls, and treasurer, Dr. J. W. Avery, Proctor. Burlington was selected as the next place of meeting.

CINCINNATI ACADEMY OF MEDICINE.

Regular Meeting, Oct. 7, 1901.

President Dr. N. P. Dandridge in the Chair.

Discussion on Major Wm. O. Owen's Paper.

Dr. P. S. Connor (medical member of the commission appointed by President McKinley to investigate the conduct of the Spanish-American War) opened the discussion on Major Wm. O. Owen's paper, "Preventable Disease in the Army of the United States; Cause, Effect and Remedy." He stated that many of the lessons which the Civil war had taught seemed to have been forgotten in the Spanish-American war. It was certainly possible to have prevented many of the diseases, particularly typhoid fever, but unfortunately preventive measures were not instituted in time. He stated that in many instances the seeds of typhoid fever were carried into the camps from the starting points of the troops, and that the soldiers were not infected so much from the camps established later. Then again crowd poisoning was a potent factor in breeding disease. A large part of the medical force was unfamiliar with military matters and camp sanitation. Sinks, in Camp Thomas, for instance, were not dug until ten days after the troops arrived, and when dug were soon allowed to fill up and overflow. Everything that was unsanitary, it seemed, existed at Camp Thomas. And what was true of this camp was true of many others to a greater or less degree. If troops could have been kept in small companies, thoroughly isolated and inspected regularly, nothing like the amount of sickness would have occurred. The morale of the camps was bad, and the country will suffer for many years from the results of the diseases engendered in these camps; pension grants will increase materially from year to year.

The responsibility for disease should be established, but as to how we are to get out of the existing difficulties he did not know. Reform should begin with the Medical Department, and not with a medical officer here and there. Medical officers have not enough authority. Give them authority along the lines of sanitation, inspection of troops, medical supplies, etc., and then hold them responsible for any dereliction of duty along these lines. Nothing in the way of reform can be accomplished unless the movement begins in the Medical Department of the army. Unquestionably the Medical Department should have its own transportation. Many times supplies arrived at their destination but could not be gotten out of the cars without orders; in other instances supplies that were started promptly on their way did not arrive at all. In conclusion, Mr. Connor said that everybody realized the necessity for radical changes in the Army Medical Department, but thought that nothing would ever be accomplished through resolutions passed by different medical societies throughout the country. It was unfortunately true that a word from one of the dozen prominent politicians who could be named would carry more weight and be more liable to accomplish results than the resolutions of all the medical societies of the country. Finally, considering all the circumstances connected with the Spanish-American war, it was wonderful that the Medical Department got along as well as it did, and that there were not more lives sacrificed.

Dr. S. P. Kramer (major and surgeon, U. S. Volunteers, Spanish-American war) stated that sufficient time had not elapsed since the war, for the people to calmly think over the lessons to be learned from experience. Many adverse criticisms had been made of the Medical Department, some of which were no doubt just, but it must be remembered that the causes leading to such criticism were and are just as rife in civil life as in the army. He had listened during the evening to a good deal of criticism of army regulations, but to him army regulations were a necessity, and red-tape an essential part of the system; the regulations of the United States Army were the compilation of the experiences of men who had seen years of service and were therefore fully competent to formulate plans for the guidance of the army. As in civil, so in army life, a great deal depends upon the individual. He himself had had no trouble in obtaining medical supplies, but he knew those who did, and in many such cases the fault was with the medical officer. Some of them wasted supplies; others did not go about obtaining them in the right way. The causation of typhoid fever was due to the unsanitary condition of the camps; the remedy for this was education along the line of sanitation, and if the laws of governing this branch of camp equipment should be violated the offender should be severely punished. He wished to offer the suggestion that many of the so-called laws of sanitary science were by no means thoroughly worked out, and that officers of the line could not be very severely blamed for not following what were to them, at the best, but theories. But he thought that such of the laws of the science as were known should be taught officers of the line at the military academy at West Point. He thought Major Owen was right in bringing this matter before the authorities, and likened him unto a wedge which would be considerably hammered and the edge taken off it, for his temerity in forcing these unwelcome truths upon the army. Contract surgeons, he said, occupied a very anomalous position; they have no responsibility; practically they can resign after giving two weeks' notice; they are exposed to all the risks a regularly appointed medical officer runs; they are not in the line of promotion, and they have not the authority of the regularly appointed medical officer, which is little enough, it is true. Under such disadvantages the service does not get the best there is in these men. In conclusion, Dr. Kramer stated that notwithstanding all the disadvantages under which the army corps labored, the mortality from typhoid fever was but little, if any, greater than that obtained in private practice or in the large public hospitals of civil practice.

Dr. Byron Stanton (late major and surgeon, U. S. Volunteers, 1861-65) said that the paper of Major Owen strongly impressed what has been often said, that it is not the carnage of battle, but the pestilence that lurks in the camps, that is most to be feared. It is a sad commentary on the management of our troops that so large a per cent. of the deaths should have been from typhoid fever, a disease more easily prevented than any other except smallpox. When nearly 22 per cent. of the soldiers, selected, as Dr. Owen has said, from among the flower of young American manhood, suffer from a preventable disease there must be something wrong with those in authority. I am sure that the figures given are not exaggerations. I believe it to be an underestimate, although coming from official sources. The investigations of the commission consisting of Drs. Walter Reed, E. O. Shakespere and Victor C. Vaughan, appointed to study the causes and spread of typhoid fever among the troops at various camps in the United States during the Spanish-American war, show that many of the cases returned under the head of diarrhea, continued fever and malaria, were undoubtedly cases of typhoid fever. The report of Dr. Vaughan, one of the commission, shows that more than 80 per cent. of the deaths from the Spanish-American war were from typhoid fever. That much of the mortality might have been prevented by means known to sanitarians, I fully believe. During the Civil war the per cent. of mortality from the preventable diseases was, no doubt, greater, but at that time much less was known about preventive medicine than was known in 1898 and 1899.

With the advance in sanitary knowledge greater responsibility rests upon those having charge of camps and troops. The application of knowledge now in possession of sanitarians has resulted in a marked diminution in the last decade in the mortality of cities and towns, amounting to 180 in 1,000,000 of population, as shown by the vital statistics published by the U. S. Census Bureau. The application of the same knowledge to camp sanitation would have resulted in a greater saving of life among the soldiers. By means known to sanitarians before the outbreak of the late war, the death-rate should have been greatly lessened. That knowledge was not possessed by other officers though known to and urged upon them by the Medical Corps of the Army, but with the indifference to advice from medical sources, even in regard to medical matters, that is characteristic of the average commanding officer, the most threatening danger of camp-life—filth—was permitted to exist. Waste was not safely and duly disposed of, consequently there was contamination of water supplies, and the other known means of communicating typhoid fever were present. The spread of typhoid fever is generally attributed to the use of water contaminated by the feces of typhoid patients, and this is, no doubt, the chief cause of its spread, but it is not the only cause. Air-borne typhoid is of more common occurrence than has generally been supposed. This is especially true among soldiers. Other sources of infection than water contaminated with feces, are here more potent than in civil life. The dangers intensified by army life are as follows: Water contamination by the urine of typhoid patients, an undoubted source of danger; contamination of the camp with fecal matter, which permits the carriage of the bacillus by dust; the use of shallow, open sinks by typhoid patients without disinfection of the dejecta, which renders possible the carrying of contagion by flies, an often present and too much overlooked source of danger; hospital contagion, a danger greater than is generally supposed; the sleeping of the ambulant cases in the company tents, through which the bedding, clothing and tentage become contaminated; the use of the same cups and utensils, and lack of cleanliness on the part of cooks. That there are other means of communicating typhoid fever than by the use of polluted water is shown by the result of moving a camp, the water supply remaining the same. A change of camp site, even for a short distance, is followed by a diminution of disease, especially typhoid.

The position taken by Major Owen is the correct one. Sanitary matters should be under the care of the medical officer. The prevention of disease is his first care. He can best make use of sanitary knowledge. The means for the prevention of disease are best known to him. Medical officers have a greater knowledge of all matters relating to camp and personal hygiene, and much should be entrusted to their care in the selection and maintenance of camps, except where the exigencies of war may prescribe the location of the troops. More of preventive medicine should be taught the medical officer and then much more should be required of him. He should be given more authority. To him should be entrusted the prevention or removal of all sources of camp pollution. Filth is a most threatening danger. The health of the army depends largely upon cleanliness, and the success of the campaign may depend upon the health and well-being of the troops. Sickness reduces the strength of an army not only by the loss of those who are sick, but by the detail for hospital duty. Aye, even more than this, the depressing influence of the presence of sickness affects the zeal, spirit and confidence of an army. Even those who are not sick are less efficient as soldiers. The medical officers whose duty it is "to investigate the sanitary condition of the post or command" should have something more than the mere privilege of making recommendations that they have no power to carry out—recommendations that the commanding officer, too often uninformed upon sanitary matters, may accept or reject. It is generally the latter, as instanced in the paper of Major Owen, which I most cordially commend.

Dr. Edwin Ricketts said that in no sense can it be claimed that this paper was a political move. It is to be commended for its teeming facts as to superior line officers' vested authority in matters that should be referred to the army surgeon, as superior medical authority, for advice before final decision. It steps forward and into bold relief and deserves much consideration by way of emphasis. It calls "attention" in no uncertain sound to the importance of preventive medicine in selecting army camp sites and in timely changing them, so soon as the army surgeon, who should be referee, sees the necessity of so doing, except when the camp site is held as a military necessity. Then the army surgeon should waive all other considerations. It is shown how much more deadly were the germs of typhoid fever and dysentery in the camps located in the United States, on account of lack of hygienic considerations, than were the bullets of an opposing army in the enemy's country, there being 3116 deaths from preventable diseases, as compared with 1070 for homicide, suicide and gunshot wounds. The cross-road physician would feel himself disgraced and with a ruined professional reputation if he had a mortality following his treatment of typhoid fever that came anywhere near this. The deplorably high mortality in typhoid fever and dysentery can not in justice be laid at the door of the army surgeon. Their results in treatment show a mortality of 7.60 per cent. of all cases. This mortality represents 86.24 per cent. of the total mortality of all diseases. The pleadings of the medical officers with their superiors of the line for a change in camp site were in vain. For these pleadings and suggestions they were to be chagrined and humiliated on account of the lack of consideration that should have been extended them. The fault of this lies within our own ranks, for we lack independence, dignity and determination in not demanding and seeing that we have extended to our profession due respect and due consideration for the services rendered to the service of the United States. Major Owen has proven to us fully the courage of his convictions and the cause for the faith that is in him, instead of remaining in the usual subordinate, submissive quietude of the average army surgeon. It has been wisely arranged by our government that any soldier, as soon as he is found to be suffering from tubercular infection, should be promptly isolated by being taken to one of the national farms for tuberculosis. These farms are especially located for the arrest and possible cure of the disease. On the other hand, the poor and unfortunate typhoid fever patient has been kept within an already infected hospital camp. It was safer to have been a private in the charge on San Juan Hill than to have been in Camp Meade, Camp Alger, Camp Thomas or even Camp Merritt, California. With the amended bill as suggested by Major Owen for presentation to Congress, could the tears of the 3116 mothers and those of the relatives and friends, be presented, I am sure it would have a hearing. Could the 3116 men have had the opportunity, they would have gladly and gallantly responded to the bugle's blast, calling them to the charge, even though every life of them had to be sacrificed. They would have accepted the inevitable as thousands of American soldiers have already done. The 3116 deaths from typhoid were from sanitary neglect. It was not excusable. It can not be condoned, for there was no enemy to fight, no enemy within a thousand miles. There could have been no military necessity in these places of assembly and instruction.

Dr. Frank W. Hendley (Late Surgeon and Major Ohio Volunteer Infantry), said that his observation, based upon acquaintance and conversation with a considerable number of surgeons of the army, was that they do not so much desire increased rank or pay as authority and power to enforce sanitary and hygienic measures. The possession of such authority and power would necessarily include the exclusive control of all property, and transportation of all hospitals, hospital corps, ambulance companies and other subdivisions of the medical service. The present status of the medical officer is well-nigh intolerable. As he can only recommend or make request, his efficiency depends upon the complacency of the line officer with whom he is associated. The medical officer may recognize a certain source of danger to the command and recommend certain action to obviate it, but unless the line officer in command concurs and acts in accordance with the recommendation the surgeon can do nothing except wait for the disaster that is to come and then cheerfully go to work to repair the damage.

At the outbreak of the Spanish-American war it was well known that smallpox existed in Cuba, where the troops were expected to operate; consequently the surgeons in all the regiments in Ohio and probably in all others, recommended vaccination during the period of mobilization, in order that the wounded arms might heal before the active camp life commenced. Fortunately, we had a colonel who recognized the propriety of the recommendation and concurred heartily, even going so far as to punish severely half a dozen men who refused to comply with the order; but one Ohio colonel assumed to know more on the subject of vaccination than his surgeon, and refused to issue an order requiring the operation, saying that he did not believe in vaccination. When this regiment reached the South, however, the dictum of the colonel was overruled by higher authority, and the three medical officers were compelled to vaccinate their eleven hundred men under the added disadvantages of the crowded tent life, in the heat and dust of the southern camp, and during the work and constant drills which were necessary there; consequently the cleanliness, asepsis, and the rest for the affected arms which was desirable, could not be obtained, and infected arms were very numerous, thus throwing much unnecessary additional work upon the surgeons, delaying the efficiency of the regiment, and, I doubt not, laying the foundations for numerous pension claims. Many such instances might be narrated of arbitrary overruling of medical recommendations with unfortunate results, but time does not permit. Medical officers protested against the location of certain camps and the continued occupation of the same site for lengthened periods, calling attention to the fact that all authorities fix the limit of safety for continuous occupation at two weeks, but their protests and recommendations were frequently endorsed, "not concurred in," and the world knows the results that followed at Chickamauga, Tampa, Tampa Heights, and elsewhere. Colonel J. D. Griffiths, Chief Surgeon 3d Division First Army Corps at Chickamauga, says, "Our Medical Department should be divorced from the Quartermaster's Department. As a matter of fact the Quartermaster's Department is largely at fault for much of the trouble, and, while satisfactory for a small army in time of peace, when built upon and expanded as required for an army ten times as large, it failed absolutely and went to pieces. During the hot summer months 75 per cent. of the command still wore the heavy woolen clothing. Insufficient tentage was issued, resulting in overcrowding and this was a cause of much of the subsequent sickness." To these remarks I would add that during the first few weeks it was impossible to secure lumber for tent floors, such requisitions being always disapproved, and as for the tent crowding it was frightful at all times. Many of our men were still in the little shelter tents, well named "pup-tents" by them, all through the rainy season at Port Tampa City. Not until August could tent floors be obtained by our regiment. Requests for disinfectants were met by harsh instructions to read the Regulations, which provide as follows: "The routine use of disinfectants is prohibited." Later when public indignation was aroused against the conditions prevailing, all these supplies were issued freely; but at that time it was like locking the stable door after the horse had been stolen. When at Columbus and still under state control, a liberal supply of chlorid of lime was supplied and used in the sinks; but as soon as we were mustered into the service of the United States, this stopped instantly, because, under the Army Regulations, we were required to cover the contents of the sinks three times daily with dry earth, notwithstanding the fact that at that time it was raining every day, the camp was a sea of mud most of the time, and the sinks half full of water. Surgeon-General Sternberg himself, in his Presidential Address before the Association of Military Surgeons of the United States, in 1895, after commenting upon the mortality during the Civil war, predicted that the sickness and mortality from typhoid fever, dysentery and traumatic infectious diseases would be much less in any future war, but made an important qualification of his prediction as follows: "The extent to which this may be accomplished will depend upon the preparations we make in advance and upon the success we have in obtaining the intelligent cooperation of officers in command of troops in carrying out the recommendations we may make."

On the subject of control of all property and transportation, the defects in the present system are most conspicuous, and Major Owen is undoubtedly right when he calls attention to the complications that might arise under the provisions of the Geneva Convention. The distinction between the European and the American meaning of the word "ambulance" must be carefully borne in mind. In our country it means simply the ambulance wagon, whilst abroad it means the entire field hospital. In our army, under the present system, nothing is exempt from capture except the ambulance wagons, the sick men and their medicines, in addition to the surgeons, hospital corps and nurses. The enemy may legally take the tents over their heads, the cots on which they lie, their food and clothing, their cooking outfit, their wagons, horses, mules, and practically all the hospital supplies, except the medicines and ambulance wagons. And all this simply because tentage, cots, wagons, etc., belong to the Quartermaster's Department and nothing of the Quartermaster's property comes under the provisions of the Geneva Convention. The Hospital Department occupies a position of dependency upon the Quartermaster's Department for absolute necessities. Ordinarily these are supplied freely, but just when they will be most urgently needed, then the Quartermaster will be unable to supply them, and there lies the fatal error of the situation. Just at the time when the surgeon may be asking the Quartermaster to give him more tentage, wagons and mules, the Quartermaster, in the exigencies of the occasion, may feel it necessary for the public service to take away what he has already given. If ammunition and other supplies are needed at the front, the Quartermaster will certainly keep his wagons for that purpose or hold the tents to keep supplies in, rather than issue them to the Hospital Department. The preservation of the fighting line will be considered as of more importance than the comfort of the sick. Over in the Philippines the captain of a company marching all day in the rain reprimanded his men when he found they were covering their shoulders with the flannel cloth given them to cover their rifle locks, saying, "keep your rifles dry, the government can get plenty more men in your places, but it can not get Krag rifles in the place of those you spoil here." How many times has it occurred that when the surgeon asked for wagons to haul ice or water for the hospital, he was told by the Quartermaster that all the wagons were engaged in hauling wood! General Sternberg had his supplies ready at Tampa, but under the Regulations he had to depend upon another department for their transportation to Cuba and that transportation he could not get. If General Sternberg had possessed his own means of transportation for his department Clara Barton could not have made the observation she did. Under present conditions if we go to war again, the sad experiences of the Civil war and of the Spanish-American war, the needless suffering and want endured by the sick and wounded, will be repeated and we will have to depend on outside volunteer relief organizations to do the work that the regular Medical Department could and would do if their hands were not tied.

The system is faulty, therefore the results must be bad. It will never do to depend on volunteer civil organizations to do permanent work in a military campaign. The Sanitary Commission did noble work during the Civil war, but that was a generation ago before our knowledge was in any degree perfected. The National Red Cross helped very much during the Spanish-American war, but their aid should have been unnecessary. Their hospital ship was the first vessel to sail into Santiago harbor and its cargo was a literal godsend to the people there. During the Franco-Prussian war the French Red Cross Society undertook to care for the sick and wounded of the army and established numerous ambulances as field hospitals, but those in charge were compelled to admit the system was incorrect. One says: "The sanitary service of the army should have an organization wholly military and in no way civil, especially on the battlefield;" another says, "There can be no place in any well-regulated army for a volunteer health service." If my information is correct, France has recently made the Medical Department of her army an independent, autonomous department well organized for effective service. Our Medical Department should be so complete that outside interference, well meant as assistance, but nevertheless an intermeddling which causes confusion, will not be necessary and therefore will not present itself. Dr. Tripler, in commenting on some of the difficulties arising during the Civil war, says: "Certain persons suddenly smitten with a more intricate knowledge and thorough perception of the duties and administration of the Medical Department than I had been able to acquire in thirty years of experience and study, obtruded their crude suggestions, marring where they could not make, and paralyzing where they attempted to quicken, succeeded by their uninformed zeal. They, innocently enough, perhaps, but none the less unfortunately enough, succeeded in defeating the measures I had much at heart, had carefully contemplated and intended to carry into effect at the proper time." Not only is this outside interference often irritating, troublesome and non-effective for real good, but it certainly is humiliating for a great nation to be obliged to depend on aid societies and charitable persons for ice and other necessary medical supplies. There will always be ample room for the charitable organizations to do good work in the large base hospitals and among the sick and wounded sent to their homes, but in the field hospitals and in the regimental dispensaries the Medical Department should have the exclusive management of affairs.

By the establishment of the Army Medical School and the Naval Medical School, facilities were provided for the complete training of medical officers for their special work; thus by the creation and excellent development of the Hospital Corps, the Medical Department secured a permanent body of trained, intelligent helpers under its exclusive control, and finally, by the adoption of the trained female nurse system, it perfected and completed its facilities to care for the sick so far as the personnel of the working force was concerned. If now the defects pointed out by Major Owen can be remedied, we shall have a Medical Department which will be a model for the nations of the world.

Now just a few words upon the relation of this subject to the National Guard and the State Medical Department. The nation must, of course, depend upon the National Guard to swell the army to effective strength in time of war and will always be the training school of popular military knowledge. In order that the transfer from state to federal control may take place promptly and easily, the National Guard in its organization, equipment, discipline and instruction must be identical, as near as possible, with the regular establishment. The physical examination of recruits must be thorough and rigid, based closely upon the rules laid down in Tripler's Manual. The Medical Department must be removed from the influence of politics or personal favoritism, and detached from local regimental control. That is, medical officers must be members of the state medical department instead of mere regimental staff officers. They must be appointed only after rigid technical examinations before a board of medical officers, re-examined after three years' service for promotion to captaincy, then again examined at the end of five years for promotion to surgeon-major, provided a vacancy exists. The hospital corps likewise should be enlisted as members of a state hospital corps under exclusive control of the Medical Department. The hospital stewards should begin as acting stewards and secure promotion by examination after one year, the same as in the army. The matter of detailing surgeons, assistant surgeons, stewards, and hospital corps men to serve with the various regiments should be very simple. The above plan is in operation in the states of Minnesota, New Jersey and Massachusetts, so far as state laws permit, and it is found to work in a satisfactory manner. What is urgently needed is uniformity in all the states, and this can only be secured by enactment at Washington of laws that will make the National Guard a secondary or reserve part of the army, thus insuring thorough military control and thorough inspections with power to weed out triflers and incompetents and to build up an effective organization that will stand ready to march at short notice from the local armories direct to the field of operation.

But coming back to the Medical Department: with the organization I have suggested and the use in that organization of all blanks, forms, reports, requisitions, etc., precisely as used in the army Medical Department, substituting only the name of the state in place of that of the United States, and with medical supplies of the same nature, obtained and expended under the same regulations, the terrible bugbear of "paper work" will not be a burden and "red-tape" will not be complained of when the guard is suddenly called to active duty, because the forms will be familiar and the great benefits of the much-dreaded red-tape will be known and appreciated. With medical officers and stewards thus made familiar with the forms of paper-work and the details of Regulations, the Volunteer Medical Officers will be ready to at once work hand in hand with their brethren of the regular service and would cease to merit the title of "fool volunteer."

Dr. Charles H. Castle (Late Captain and Assistant Surgeon First Ohio Volunteer Cavalry, Spanish-American war) said: An experience of some seven months with our army hospitals in the field leads me to unqualifiedly endorse Major Owen's demand that the Medical Department shall be taken from its present absurd and disgraceful dependence upon other departments for its supplies and transportation. There is a publication issued by the government called the United States Army Regulations, and during my first two months in the service I studied this assiduously, but notwithstanding the study I do not think that the full hideousness of its absurdity struck me until one day the ordinance officer, mind you, the man who deals in ponderous death-dealing weapons—in shot and shell and tons of smokeless powder, and in seige trains miles long—came around and gave me a knife and fork and spoon and made me receipt for them!

Major Owen refers in particular to the conditions in the large camp at Chickamauga. Thanks to the liberality of the State of Ohio and some personal friends of the regiment, and thanks also to the fact that we were camped on a sunny plain with good natural drainage, the First Ohio Volunteer Cavalry to which I was attached was almost independent of the government it was serving, in the matter of medical and surgical supplies; as late as the month of June, three months after the regular forces had established themselves in this camp, our regimental hospital had to lend to the headquarters hospital of the Commanding Major-General, mentioned in Major Owen's paper, the necessary surgical dressings for an operation for extirpation of the inguinal glands! The only possible way of accounting for this dearth was that the Medical Department had to depend upon the Quartermaster's Department for transportation, and that department had its mind and its box-cars filled with uniforms, and boots and shoes and tents. Speaking of tents allows me to record the manner in which the Medical Department of the United States Army sometimes gets tents for its typhoid fever patients—and sometimes does not. You will perhaps pardon me for quoting from the medical history of the First Ohio Cavalry which I had the honor to read before you some two years ago. During the first ten days at Camp George H. Thomas, the medical officers of the regiment had two difficulties to contend with; one was the delay in furnishing the troops with fresh beef, keeping them on the travel ration known among the soldiers as "canned giraffe" because it seemed to be all neck, until their hitherto untried digestions were thoroughly upset; and the second was the difficulty in procuring hospital tents. The two medical officers were each entitled to a wall tent, but for the sake of the sick we were obliged to bunk together and give up one of our 8x10 tents as a hospital. Repeated requisitions made by Major Bunts failed of response, until one of our majors of the line, an ex-officer of the regular artillery, discovered that he had in the chief quartermaster an old friend, and his personal solicitation accomplished promptly what a requisition "through the regular military channels" was powerless to effect. Two hospital tents were therefore given to us, and never, from that time, the last week in May, until the 20th of September, when I turned them over to the Depot Quartermaster at Tampa, failed to leak whenever it chanced to rain. These tents were inspected at least once at Chickamauga, and condemned, but were never replaced.

The regiment had left Chickamauga just as the violent epidemic of typhoid had begun there, and had proceeded as ordered, to Lakeland, Fla. For the ten days following our arrival at Lakeland we received our daily addition of cases of typhoid, all cases dating back to Chickamauga, and the additions ceasing as we reached the limits for the period of incubation. Thus on the 18th we received 2, on the 19th 2, on the 20th 2, on the 22d 3, on the 23d 2, on the 24th 1, on the 25th 2, and on the 26th 2. By July 22 we had 12 in the hospital, just filling it; by the 23d we had 14 in hospital, overfilling it. The hospital was cleared of all cases but typhoid, for we knew of typhoids in quarters that needed attention. Requisitions were made on the Quartermaster's Depot at Tampa, and after a delay of a week, we received one more tent. So that on July 27, when, we may say, we harvested the entire crop of the Chickamauga epidemic that we had brought with us, we had 18 in hospital, filling it, and 34 in quarters, 12 of which latter were typhoid. Being in quarters means lying on the sand floor of a tent, with one blanket under you, and one blanket over you, not at all a bad bed in summertime; but it also means getting up and going to the cook tent every time you want a drink of water, and walking one or two hundred yards outside the confines of camp every time you have one of those frequent typhoid stools, and it became my melancholy duty to make a postmortem examination of a private in the First United States Cavalry—our neighbors—who died of exhaustion from this cause. Early one hot, damp morning this patient walked from his quarters to the sink and back again, laid down, and died an absolutely unnecessary death. The postmortem showed the characteristic lesions of typhoid fever in the second week occurring in a man previously suffering from marked inanition.

About this time there came to us, on behalf of the Army and Navy League of Cincinnati, a lady of education, refinement and tact, and one absolutely devoid of the hysteria that unfortunately afflicted so many of the ordinary camp visitors; she was full of sound common sense that she had gathered in sojournings in various parts of the world. This personal inspection on the part of the Army and Navy League made it the most valuable agency of the kind that I know of, not excepting the Red Cross Society. The camps of the brigade were inspected and the situation discussed, and the need of tents, cots, hospital furnishings, milk, eggs, etc., were acknowledged. Hospital tents had been requisitioned for by Major Bunts, but could not be had, as the Quartermaster at Tampa asserted that all available tents had been given to the new West Tampa [illegible] Hospital and to the depots at Fernandina; cots could [illegible]ad presumably for the same reason, and the limited [illegible] of cots in the village of Lakeland had been exhausted; [illegible]and eggs were being bought by the money supplied by [illegible]eland friends of the regiment. This business-like angel [illegible] the Army and Navy League went to Tampa, obtained an interview with the Quartermaster, and a promise of the necessary tents—the second time in our short military history where an unofficial interview of an outsider accomplished promptly what the requisition "through regular military channels" had totally failed to do. I met the lady the next day in Tampa. We went together to the Quartermaster's office. I stated my errand to the assistant temporarily in charge—the procuring of hospital tents. He politely refused my request on the grounds that he had none. I represented the urgency of the case, the large number of our sick, and the character of their illness. Still a refusal. Then the lady interposed; she announced the promise made by his chief the day before, and the gallant assistant went to the telephone, called up the Quartermaster's Depot, asked how many hospital tents they had, and directed that four be sent at once to the First Ohio Cavalry at Lakewood.

Having seen, now, how the Quartermaster's Department aids the medical officer in his daily visits to the sick, let us see how another department discharged its duties toward the dependent Medical Department. The methods of feeding the sick in the hospitals of the armies of the United States are practically as follows: When a soldier is sick or wounded and is transfered to a hospital, the Commissary Department subtracts his rations from the total amount going to his company, troop or battery and is supposed to send the ration to the hospital in which the soldier lies; and as even the United States Government knows that sick men frequently need dissimilar food from well men, provision is made that at the request of the surgeon in charge, the Commissary Department shall buy this ration from the hospital, or, in other words, shall furnish money at the rate approximately of seventeen or eighteen cents a meal, so that sowbelly, onions, hard tack, and coffee can give way to milk and eggs. Notwithstanding this express provision of the Army Regulations, the Chief Quartermaster at Camp Thomas, Chickamauga Park, Ga., flatly refused to purchase these savings made by our hospital, though frequently requested to do so by Surgeon-Major Bunts through our regimental commissary. I do not know his excuse. The better his excuse the more is exhibited the inherent viciousness of this detestable system. Our sick men were fed milk and eggs by the women of Chattanooga, and every morning our ambulance could be seen along with a long line of other medical mendicants outside the door of their commissary depot, where they were performing the functions abandoned by the men of the War Department of the United States. That this most peculiar and roundabout method of supplying hospitals with food has its disadvantages, to say the least, was illustrated again in our hospital at Lakeland, Fla., when the Second Provisional Cavalry Brigade of the Fourth Army Corps moved north and left me under the pines of Florida with seventy sick men in bed. The brigade commissary did all he could for me; he directed the commissary officer to leave rations with me for thirty days for the whole number of sick. These hideous things could not be eaten by typhoid fever patients and must be sold to purchase milk; but every commissary sergeant in the brigade had been trading sowbelly, coffee, flour and baking powder to the neighboring "crackers" for fresh vegetables for six weeks past, and when I came to sell I found the market overstocked and prices ruinously low. During our mad quest for purchasers almost all of our perishable articles, like potatoes, onions, hard-tack, etc., spoiled, for they had no shelter, so that our total realization from these rations was not enough to keep our hospital going one week. It is true that an order was promulgated from the Adjutant-General's office on Aug. 15, 1898, allowing to the hospitals from the funds of the Commissary Department, sixty cents a day per patient. As soon as I discovered this I made application for the allowance. In the interval before its receipt, Dr. Partello, the resident agent of the Red Cross Society at Tampa, visited me and when I told him that I had made application for the sixty cents per day, he deplored the fact, told me that I had better not accept it when it came, and that it would be an almost endless source of annoyance and confusion to me. I regret to be compelled to state that the predictions of the good Doctor have been fully verified. They compelled me to pay back out of the sixty cents the full value of all the rations that had spoiled or been sold at nominal prices, so that really the net result of my application was abundant correspondence, voluminous reports, severe aggravation of the surgeon, and unabated, unappeased hunger of the typhoid convalescents. The regular medical officer in charge of the West Tampa [illegible]l, having had seven years' experience of Depa[illegible] exhibited a degree of skill and tact in his [illegible] this matter worthy of all admiration. He [illegible]r diem for his patient and lodged it [illegible] that he could say [illegible] ny i [illegible] ing ne [illegible] p visitor: "[illegible] as he con- t[illegible] an[illegible] Red Cross [illegible]es, his [illegible]ment. [illegible]ied [illegible] he [illegible] r-latter point it is often too late to prevent harm being done. 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None was ever issued to the regiment at Chickamauga, and at Lakeland our Commissary heard so many complaints of it from the regulars who were our neighbors, that he refused to touch it and always demanded as the meat of his travel ration the canned corn beef or "canned giraffe." As for the refrigerated beef, it was very difficult to keep, and decomposition with the formation of ptomaines sometimes took place in an hour or so; I have condemned in a cook tent at noon, beef that had passed inspection at 10:30 or 11 a. m. I condemned several tons of this refrigerated beef at Lakeland.

The soldier of the republic must not be regarded only in the light as of food for powder. He is not a conscript, but voluntarily puts on a uniform which he has a right to expect will secure to him all the efficiency possible in fighting his country's enemies, and when that duty is over, if unwounded, he should return to his productive activities a healthy man. Suggestions for specific remedies must come from the experts; the medical officers of the regular service are the only ones who are well enough acquainted with the conditions both as they exist and as they should be, to be able to formulate proper plans. We know now that in at least one of our wars, the Spanish-American war, the medical officer had more work to do, and, considering his shamefully inadequate means, did it better than any other officer in the service, not even excepting the innumerable heroes of San Juan Hill. And one other thing: we know that the war against the Spaniard was a puny, miserable affair in comparison with our war against typhoid; for in this latter, those who should have been our allies aided the enemy. There are perhaps two other considerations that should claim our attention, though they may not bear directly upon Major Owen's contention. The first is that while the army Medical Department should be absolutely relieved from its present crippling dependence upon an overburdened Quartermaster's Department and from the Commissary Department, it should at the same time set its own officers free from a childish dependence upon their chief at Washington.

Finally, the strength of a chain is only the strength of its weakest link, and one of the links of the chain we are considering is the private soldier. The private soldier is usually a very verdant individual and in the calf stage of existence. He will go without camp bounds and drink of forbidden water and eat of forbidden and monstrous thinks sold by hucksters, and now that the canteen is abolished, he will get out of the garrison and drink of vile and forbidden whiskey. The private soldier does not know, and I have never heard that any provision has been made to instruct him, until after he gets sick, when his surgeon has the opportunity to give him some bedside instructions. When I was in service, the commanding officer of our regiment requested the medical officers to deliver occasional lectures at the daily Officers' and Non-Commissioned Officers' School, and I do not know of even this being done in any of the organizations camped in our neighborhood. These instructions should be extended to all and should be held to be an extremely important part of the schooling of the soldier, especially when we know that in all armies in all times, more men have perished from disease than from wounds. In fact, the saying of the old prophet that "they who take the sword shall perish by the sword" never has been correct; and the proper rendering of that biblical verse should be "they who take the sword shall perish by diarrhea." This is true, but it is not creditable to the American people and the twentieth century, and it probably can be stopped, but only in the way which Major Owen's paper indicates.

Dr. W. O. Owen (Major and Surgeon, United States Army) in closing the discussion, said: That which I tell you is no new story, for Irving C. Rosse said some years ago, "If the army medical officer were so fully aware of the importance of prevailing disease and the efficacy of judicious sanitary measures in their prevention, how does it happen that a state of affairs so completely opposed to the first principles of hygiene has been permitted to exist? An answer to this question is found in the unsettled relations existing between the military and medical authorities. In former days the military authorities held that the duties of a medical officer were to treat the sick and wounded, and any recommendations bearing on the general management of the men were deemed intrusive and resented as an interference with the province of the commanding officer. 'Medical opinions are very good when called for' was said to the senior medical officer in the Burmese war; and in the Crimean war, Inspector-General Alexander was informed by a general of division that he 'had better keep his suggestions and strictures until asked for.' It was not within the power of the medical officer, as at the present day, to remedy such evils, and if the suggestions were acted upon at all, it was owing to the common sense or the good feeling of the Commanding Officer."

The above is a very bitter statement of a truth existing in the past. That such a condition can exist may to-day be questioned. Yet a friend of mine, a gentleman who was born in the city of Cincinnati and is a friend of many present, informed me that in 1898 he reported to the general in command of the camp in which he was on duty that the camp was in bad condition and that an epidemic of typhoid was threatening. The answer that he received was an order to leave the general's tent and not to return to it unless he was sent for. How well the medical officer was listened to in the Crimean war is shown by the fact that many regiments lost over 10 per cent. of their strength, some 45 per cent., some 75 per cent., and one lost more than its average strength. It was in this war that the inspector-general was told that he "had better keep his suggestions and strictures until called for." It was in this same war that 20,000 pounds of lime juice were held for future use while scurvy was disabling the entire force.

It is not my idea to attack any man for the past, but to tell of the past that we may be enabled to see more clearly what is needed in order that we may be able to so draw a law that the responsibility may be fixed definitely on some one man, so that he may suffer for his carelessness, or that he may be removed for his lack of ability to control matters which he has been appointed to superintend. Have a law so drawn that it fixes definitely the responsibility. The bill I offer will do this, for the sixth paragraph puts in the hands of the Secretary of War to say when and under what conditions the line can take away from the Medical Department the responsibilities placed upon them by this bill. I have offered this only as a thought in the right direction; if any one will better it, I shall be grateful. My belief is that the line should at all times have the right to take upon their shoulders an absolute disregard for all sanitary law, but that when they do, that they should do so with a direct personal responsibility under the law for the accuracy of judgment used as shown by the results attained. I can not think that men should be subjected to unsanitary conditions in camps of assembly, in camps of instruction, or in war time when the approach of the enemy is not to be dreaded. Sanitary dangers like all other dangers must be taken, when in the opinion of the man in command it is necessary to do so for the general good.

I desire to call attention to General Orders 100, 1863, the last part of 116 says, "An honorable belligerent allows himself to be guided by flags or signals of protection as much as the contingencies and the necessities of the fight will permit.

for we knew of typhoids in quarters that needed attention. Requisitions were made on the Quartermaster's Depot at Tampa, and after a delay of a week, we received one more tent. So that on July 27, when, we may say, we harvested the entire crop of the Chickamauga epidemic that we had brought with us, we had 18 in hospital, filling it, and 34 in quarters, 12 of which latter were typhoid. Being in quarters means lying on the sand floor of a tent, with one blanket under you, and one blanket over you, not at all a bad bed in summertime; but it also means getting up and going to the cook tent every time you want a drink of water, and walking one or two hundred yards outside the confines of camp every time you have one of those frequent typhoid stools, and it became my melancholy duty to make a postmortem examination of a private in the First United States Cavalry—our neighbors—who died of exhaustion from this cause. Early one hot, damp morning this patient walked from his quarters to the sink and back again, laid down, and died an absolutely unnecessary death. The postmortem showed the characteristic lesions of typhoid fever in the second week occurring in a man previously suffering from marked inanition.

About this time there came to us, on behalf of the Army and Navy League of Cincinnati, a lady of education, refinement and tact, and one absolutely devoid of the hysteria that unfortunately afflicted so many of the ordinary camp visitors; she was full of sound common sense that she had gathered in sojournings in various parts of the world. This personal inspection on the part of the Army and Navy League made it the most valuable agency of the kind that I know of, not excepting the Red Cross Society. The camps of the brigade were inspected and the situation discussed, and the need of tents, cots, hospital furnishings, milk, eggs, etc., were acknowledged. Hospital tents had been requisitioned for by Major Bunts, but could not be had, as the Quartermaster at Tampa asserted that all available tents had been given to the new West Tampa Fever Hospital and to the depots at Fernandina; cots could not be had presumably for the same reason, and the limited supply of cots in the village of Lakeland had been exhausted; milk and eggs were being bought by the money supplied by Cleveland friends of the regiment. This business-like angel of the Army and Navy League went to Tampa, obtained an interview with the Quartermaster, and a promise of the necessary tents—the second time in our short military history where an unofficial interview of an outsider accomplished promptly what the requisition "through regular military channels" had totally failed to do. I met the lady the next day in Tampa. We went together to the Quartermaster's office. I stated my errand to the assistant temporarily in charge—the procuring of hospital tents. He politely refused my request on the grounds that he had none. I represented the urgency of the case, the large number of our sick, and the character of their illness. Still a refusal. Then the lady interposed; she announced the promise made by his chief the day before, and the gallant assistant went to the telephone, called up the Quartermaster's Depot, asked how many hospital tents they had, and directed that four be sent at once to the First Ohio Cavalry at Lakewood.

Having seen, now, how the Quartermaster's Department aids the medical officer in his daily visits to the sick, let us see how another department discharged its duties toward the dependent Medical Department. The methods of feeding the sick in the hospitals of the armies of the United States are practically as follows: When a soldier is sick or wounded and is transfered to a hospital, the Commissary Department subtracts his rations from the total amount going to his company, troop or battery and is supposed to send the ration to the hospital in which the soldier lies; and as even the United States Government knows that sick men frequently need dissimilar food from well men, provision is made that at the request of the surgeon in charge, the Commissary Department shall buy this ration from the hospital, or, in other words, shall furnish money at the rate approximately of seventeen or eighteen cents a meal, so that sowbelly, onions, hard tack, and coffee can give way to milk and eggs. Notwithstanding this express provision of the Army Regulations, the Chief Quartermaster at Camp Thomas, Chickamauga Park, Ga., flatly refused to purchase these savings made by our hospital, though frequently requested to do so by Surgeon-Major Bunts through our regimental commissary. I do not know his excuse. The better his excuse the more is exhibited the inherent viciousness of this detestable system. Our sick men were fed milk and eggs by the women of Chattanooga, and every morning our ambulance could be seen along with a long line of other medical mendicants outside the door of their commissary depot, where they were performing the functions abandoned by the men of the War Department of the United States. That this most peculiar and roundabout method of supplying hospitals with food has its disadvantages, to say the least, was illustrated again in our hospital at Lakeland, Fla., when the Second Provisional Cavalry Brigade of the Fourth Army Corps moved north and left me under the pines of Florida with seventy sick men in bed. The brigade commissary did all he could for me; he directed the commissary officer to leave rations with me for thirty days for the whole number of sick. These hideous things could not be eaten by typhoid fever patients and must be sold to purchase milk; but every commissary sergeant in the brigade had been trading sowbelly, coffee, flour and baking powder to the neighboring "crackers" for fresh vegetables for six weeks past, and when I came to sell I found the market overstocked and prices ruinously low. During our mad quest for purchasers almost all of our perishable articles, like potatoes, onions, hard-tack, etc., spoiled, for they had no shelter, so that our total realization from these rations was not enough to keep our hospital going one week. It is true that an order was promulgated from the Adjutant-General's office on Aug. 15, 1898, allowing to the hospitals from the funds of the Commissary Department, sixty cents a day per patient. As soon as I discovered this I made application for the allowance. In the interval before its receipt, Dr. Partello, the resident agent of the Red Cross Society at Tampa, visited me and when I told him that I had made application for the sixty cents per day, he deplored the fact, told me that I had better not accept it when it came, and that it would be an almost endless source of annoyance and confusion to me. I regret to be compelled to state that the predictions of the good Doctor have been fully verified. They compelled me to pay back out of the sixty cents the full value of all the rations that had spoiled or been sold at nominal prices, so that really the net result of my application was abundant correspondence, voluminous reports, severe aggravation of the surgeon, and unabated, unappeased hunger of the typhoid convalescents. The regular medical officer in charge of the West Tampa Fever Hospital, having had seven years' experience of Departmental methods, exhibited a degree of skill and tact in his managment of this matter worthy of all admiration. He drew his sixty cents per diem for his patient and lodged it safely in the bank, so that he could say to any inquiring newspaper man or anxious camp visitor: "See, I am abundantly supplied with funds," but as he continued courteously and gratefully to allow the Red Cross Society to purchase all his food and other necessities, his final reports consisted merely in handing the Government money back again practically untouched; and he had gratified the charitable contributors to the Red Cross fund in the knowledge that it was their ministrations that kept his mortality down to 5 per cent.!

The first disease that enters a military camp is diarrhea; in the midst of a campaign, whether the business in hand be fighting, or seige, or only garrison duty, the diarrheal diseases absorb by far the greatest number of "sick and wounded." The story is the same whether the campaign be a tropical one like ours in Cuba, or amidst the ice and snows that confronted the allied armies of the Crimea. Macleod says of the terrible winter of 1854-1855, that the percentage of sick in eight army corps was 73 per cent., and on another page his figures show that 66 per cent. of the sick had typhoid fever. It is then but reasonable to demand that the medical officer, the sanitarium, should designate what food should be furnished to troops, and that he should have a chance to inspect this food before it reaches the hands of the regimental commissary. At this latter point it is often too late to prevent harm being done. I have frequently had to condemn food in a troop kitchen right under the eyes of hungry soldiers, who, I was sure, felt no gratitude whatever as the poisons were removed, as there was practically very little else that was palatable left to eat. Digestive disorders, then, as we see, sometimes deprive a commanding officer of one-half of the men sent to him by his government as fighting men. Improper food is in nine cases out of ten the cause of digestive disturbances. Should no one else approve, the commanding general should be grateful if the medical man should step in and by a proper supervision of the food supply, keep to the fighting line at least ten, twenty, or thirty more men in every hundred. It is not difficult to fix the status of the beef that was issued as a factor in this indigestion. We never saw any of the canned roast beef that has produced such a controversy. None was ever issued to the regiment at Chickamauga, and at Lakeland our Commissary heard so many complaints of it from the regulars who were our neighbors, that he refused to touch it and always demanded as the meat of his travel ration the canned corn beef or "canned giraffe." As for the refrigerated beef, it was very difficult to keep, and decomposition with the formation of ptomaines sometimes took place in an hour or so; I have condemned in a cook tent at noon, beef that had passed inspection at 10:30 or 11 a. m. I condemned several tons of this refrigerated beef at Lakeland.

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I desire to call attention to General Orders 100, 1863, the last part of 116 says, "An honorable belligerent allows himself to be guided by flags or signals of protection as much as the contingencies and the necessities of the fight will permit.

117: It is justly considered an act of bad faith, or infamy or fiendishness, to deceive the enemy by flags of protection. Such act of bad faith may be good cause for refusing to respect such flags." The above was taken from the Army Regulations published the year before the United States became a party to the Geneva Convention. Yet, with a feeling of this sort published to the world, the hospitals do not have their own transportation. The United States, in the face of the Geneva Convention, still supplies the Medical Department with Quartermaster's transportation, tentage, etc., all because of the mistranslation of the French word "ambulance." The French regulation designates what constitutes an ambulance, giving the allowance of men, wagons, etc., which each class of ambulance shall have. Thus it is that the medical officer flying the Red Cross flag of the Geneva deceives the enemy, for the enemy does not know that all of these tents, wagons, horses, etc., which go to form an ambulance in the United States Army belong to the fighting force and that the fighting force is obligated, when their needs require, to take this material from the ambulances for their own use. They have the right to compel the Medical Department to again receive this property and again protect it from capture by flying over it the Red Cross flag of the Geneva Convention, when their necessity has passed. And hence it is that I have said that the Red Cross flag is a menace to the medical officer flying it over Quartermaster's property, which constitutes so large and important part of the ambulance or flying hospital of the United States Army.

So often has the thought been repeated to me that I am advocating a double-headed command, that I again feel called upon to state that I have insisted and still insist that the command continue to rest in the line where it belongs. I do, however, advocate that the Medical Department shall be made responsible for the sanitary condition of the army, and that penalties be attached for failure to avoid unsanitary conditions; that the right shall rest at all times in the line of the army to take this responsibility from the shoulders of the Medical Department to their own, taking with the responsibilities the penalties provided; that a full justification for their action shall always be the presence of the enemy and the dictation of military necessity.

Dr. J. C. Oliver moved that a copy of Mr. Hay's bill be sent to the Committee on National Regulation of the Ohio State Society with the endorsement of the Academy of Medicine of Cincinnati. Carried.

CALIFORNIA ACADEMY OF MEDICINE.

Regular Meeting, held at San Francisco, September 24.

Dr. D. W. Montgomery in the Chair.

Dr. Dudley Tait showed the necropsy specimens from a patient upon whom he had made a gastrostomy for cancer of the esophagus. The method employed (Poirier's operation) was briefly as follows: Incision through the rectus under local anesthesia; withdrawal of a cone of the muscular wall of the stomach and fixation of basis of the cone to the parietal peritoneum. A small opening is made at the summit of the cone, penetrating only the two outer layers of the stomach. This is easily done, for when the stomach wall is held between the thumb and index finger the mucous layer rolls away from the outer layer. The mucous layer is then pushed inwardly by blunt dissection, which is always bloodless. A small opening is made into the dome of mucous layer thus formed and a number fourteen or eighteen French catheter introduced. Stitching the edges of the outer cone to the skin, and closure of the remainder of the wall completes the operation, which seldom requires more than ten or fifteen minutes. The result in Dr. Tait's case was excellent; for eight months there was no leakage, and after that, leakage occurred only during intervals of gastric disturbances as manifested by hypersecretion and hyperacidity. The patient was able to take food—liquid and solid—by mouth shortly after the operation and continued doing so for four and a half months. Death from pulmonary congestion occurred thirteen months after the gastrostomy. The specimen showed the disappearance of everything resembling a canal. It is more than probable that this condition occurred early and that the continence was due to the folds of mucous membrane converging at the orifice in the stomach.

After having made seven gastrostomies by different methods, Dr. Tait gave preference to the valvular methods, among which he mentioned Fontan's and its modification by Poirier. Whatever be the method adopted the stomach opening must be very small, and in the majority of methods the tube should be introduced only at the time of feeding. Operation in two stages was dangerous as a long list of complications had demonstrated. Cocain anesthesia was a great improvement. Dr. Tait advised getting the patient up as early as the third day. Roux, of Lausanne, insisted strongly on this proposition in all of his cases of gastric surgery. The return of permeability of the esophagus after gastrostomy was due to the gradual disappearance of the fibro-stenotic process involving the tissues contiguous to the neoplasm. A similar condition was found in rectal growths after colostomy. Dr. Tait spoke briefly of experimental work he had done in view of permitting the patient to take food by the mouth in cases of stricture of the esophagus. The plan consisted in anastomosing the greater curvature of the stomach to a point on the esophagus situated above the stricture. He found that traction on the cardia invariably caused grave respiratory changes, although it was possible to dissect free and bring down a certain portion of the esophagus. Operation from behind was entirely unsuccessful.

Dr. Howard Morrow presented a man with a sarcoma on his forehead. The growth began two years ago, in the skin, at the root of his nose and was removed by a paste. Two months ago it reappeared and now extends within a half inch of the inner canthus of the left eye. The entire growth is in the subcutaneous tissue and only adherent to the skin at the point of the former scar. The patient was brought before the Academy to get the opinion of the members in regard to the best means of treatment.

Dr. H. M. Sherman said that he had never had to deal with a tumor of that character, in that location, but it did not seem to him that it would be difficult of removal as all the nodules were movable. It was possible that the growth was deeper than one would expect. He referred to the use of Coley's fluid in the treatment of such growths, and the recent publication of a paper by Coley, which cited a number of cases where satisfactory microscopic diagnoses were made, and under the use of the mixture the tumor disappeared. He thought we could not shrug our shoulders at a paper of that kind. Wyeth has stated that an incision could be made over the tumor and the tumor bathed in the fluid, but he thought it was best to remove these masses, and if some were found in front of the frontal sinus they still would be accessible for the use of Coley's fluid.

Dr. H. A. L. Ryfkogel said he had watched three cases where Coley's fluid had been used, but none of the cases were spindle-cell sarcomas. He thought it was advisable to use it for the prevention of recurrence.

Dr. Morrow also presented a man with a chancre on the tip of his tongue, of two months' duration. One week ago a typical roseola appeared on his chest. This patient was presented on account of the unusual position of the primary sore.

Dr. Dudley Tait showed photographs of a case of Dupuytren's contraction, in which all the fingers of both hands were involved. The palmar retraction was both longitudinal and transverse and on the plantar surfaces there existed a slight degree of contraction. The latter feature, noted in two former cases, was considered sufficient to eliminate traumatism as an etiologic factor. The difference of opinion in regard to treatment of this lesion could be explained in part by the existence of three distinct stages or forms of the pathologic condition; in the first, the most frequent, the aponeurosis only is involved; in the second, the skin also; in the third, the joints in addition to the aponeurosis and skin. Dr. Tait had talked recently with several European surgeons in reference to the treatment of Dupuytren's contraction, and found most of them advising radical excision, followed by grafts, in the advanced forms. Multiple subcutaneous incisions, as advised by Sir Astley Cooper and subsequently by Adams, demanded long and painful after-treatment and were frequently follcwed by recurrence. In the early stage, massage and constitutional treatment—for arthritism and diabetes—give excellent results in this lesion which belonged to the domain of medicine rather than to that f surgery.

Dr. G. Gross read a paper on "Intra-Muscular Mercurial njections in the Treatment of Syphilis." After going into the istory of this form of treatment, his paper took up the echnic of the injections. He preferred calomel to other merurial preparations, and used a glass syringe with a platinum-ridium needle 5 to 6 cm. long, which could be passed through he flame. The author claimed that the injections were not ainful in themselves, but by the third day, very often, more or ess severe pain and swelling was likely to develop. He hought that in order to pass judgment on this treatment, one ust give it a fair trial, with fair warning to patient, and the plendid results obtained would convert those who would perevere.

Dr. G. Caglieri, in discussing Dr. Gross's paper, stated that e did not think the author had shown any advantage in this ethod, and he thought there were decided objections to it; e thought the injection always produced some pain, and ometimes violent pain. Six weeks ago a man came to him uffering from marked syphilitic manifestations, who had just iven up treatment by another physician because he said he ould not stand the pain of these intra-muscular injections. ther methods of treatment he thought were equally as good nd not so painful. Of these the intra-venous injection method as probably the best. It was more soothing than the former nd not such rigid care was required. He described the technic f the injection and claimed that they were very easy of execuion. He used the 1 per cent. solution of cyanid of mercury n 20 m. doses daily for ten days, and then increased to a 2 per ent. solution, gradually lengthening the period between these njections until it is used once a week.

Dr. D. W. Montgomery said that he had but little experince with calomel injections, but that little had convinced him hat bichlorid injections were not so painful. He did not hink that unless the condition was ungovernable he would use alomel. He certainly would not use it in an ordinary case of yphilis, for one could get along very well with inunction or nternal treatment. He had never used the cyanid of merury.

Dr. Gross, in reply, said that he had made a number of ntra-venous injections and had always found them painful. ne advantage of the intra-muscular injection was that the ffect was more lasting. Regarding the pain he said he had sed the injections considerably and only remembered one case here the man did not come back. The method should be tried ithfully in order to prove its efficacy.

Therapeutics.

[It is the aim of this department to aid the general practiner by giving practical prescriptions and, in brief, methods treatment for the diseases seen especially in every-day prace. Proper inquiries concerning general formulae and outes of treatment will be answered in these columns.]

Treatment of Cough and Pain in Tuberculosis.

The following is recommended in *Amer. Med.*:

℞.	Aq. Aurantii flor.	℥iv	128	
	Syr. chloralis			
	Syr. morphinæ, āā	℥i	32	
	Aq. laurocerosi	ʒiii	12	

I. Sig.: One dessertspoonful every hour.

Catarrhal Conditions of the Female Genital Tract.

he following has been highly recommended as a very useful eral application to the mucous surfaces:

	Ichthyol	ʒi	4	
	Acidi borici	ʒss	2	
	Glycerini	℥i	32	

Sig.: To be applied locally.

The surfaces having been thoroughly cleansed they should be painted with the foregoing preparation, and when the cervix is involved, a tampon saturated with this solution may be placed *in situ* and allowed to remain for fifteen or twenty hours.

Calcium Chlorid for Menorrhagia.

Lafond, according to the *New York Med. Jour.*, prescribes calcium chlorid in daily amounts of from 20 to 30 grains by the mouth, using the following:

℞.	Calcii chloridi	gr. cxx	8	66
	Syrupi simplicis	℥ii	64	
	Aquæ	℥vi	192	

M. Sig.: One soupspoonful twice daily for eight days, beginning one week before the expected period.

M. Dalché recommends the following in the form of a pill:

℞.	Ergotin	gr. iss		09
	Quininæ sulph.	gr. 1/3		02
	Pulv. digitalis	gr. 1/6		01
	Pulv. colæ q. s.			

M. Ft. pil. No. i. Sig.: Take one such pill three times a day, beginning three or four days previous to the period and continuing throughout the flow.

Treatment of Neurasthenia.

Lemoine, in *Bul. Gén. de Thér.*, recommends the use of sodium phosphate, administered subcutaneously, stating that it is of service in supplying the phosphoric acid lost by the nervous system. He prescribes it as follows:

℞.	Sodii phosphatis	gr. xlv	3	
	Sodii chloridi	gr. xxx	2	
	Aq. destil.	℥iii	96	

M. Sig.: Inject 30 to 60 minims every other day.

Treatment of Gonorrhea.

As an injection the following is recommended:

℞.	Bismuthi subgal.			
	Pulv. acaciæ, āā	ʒii	8	
	Aq. destil.	℥iii	96	

M. Sig.: Use as an injection every two hours.

The following is employed by Cabot:

℞.	Plumbi acetatis			
	Acidi tannici			
	Zinci sulphatis			
	Cupri sulphatis, āā	gr. ii		12

M. Fiat tabella No. i. Sig.: Dissolve one such tablet in four ounces of water and use as an injection.

Treatment of Diabetic Pruritus Pudendi.

The physician should always look for diabetes, according to the *New York Med. Jour.*, whenever the pruritus is persistent and does not depend upon obvious local causes. In addition to the diet, if sugar is found in the urine, hot boric acid lotions are recommended:

℞.	Acidi borici	℥iss	48	
	Sodii boratis	gr. lxxv	5	
	Aq. destil.	Oii	960	

M. Sig.: Apply locally as hot as can be borne.

Specific Iritis.

The following is recommended to be given internally in cases of syphilitic iritis:

℞.	Hydrarg. biniodidi	gr. vi		36
	Potass. iodidi	ʒiss	6	
	Aq. destil	℥ss	16	
	Syr. aurantii q. s. ad	℥iii	96	

M. Sig.: One teaspoonful three times a day after meals.

Treatment of Appendicitis.

Prof. Bourget, as noted in *Merck's Archives*, outlines the following treatment for appendicitis when once it becomes established: The patient is put on a plain diet, and one-half an ounce of castor oil with 15 grains of salacetol (a salicylic acid derivative) is administered daily. Lavage of the stomach and of the lower bowel is productive of good. A quart of water containing some antiseptic solution may be introduced into the rectum. From three to eight ounces of olive oil may

117: It is justly considered an act of bad faith, or infamy or fiendishness, to deceive the enemy by flags of protection. Such act of bad faith may be good cause for refusing to respect such flags." The above was taken from the Army Regulations published the year before the United States became a party to the Geneva Convention. Yet, with a feeling of this sort published to the world, the hospitals do not have their own transportation. The United States, in the face of the Geneva Convention, still supplies the Medical Department with Quartermaster's transportation, tentage, etc., all because of the mistranslation of the French word "ambulance." The French regulation designates what constitutes an ambulance, giving the allowance of men, wagons, etc., which each class of ambulance shall have. Thus it is that the medical officer flying the Red Cross flag of the Geneva deceives the enemy, for the enemy does not know that all of these tents, wagons, horses, etc., which go to form an ambulance in the United States Army belong to the fighting force and that the fighting force is obligated, when their needs require, to take this material from the ambulances for their own use. They have the right to compel the Medical Department to again receive this property and again protect it from capture by flying over it the Red Cross flag of the Geneva Convention, when their necessity has passed. And hence it is that I have said that the Red Cross flag is a menace to the medical officer flying it over Quartermaster's property, which constitutes so large and important part of the ambulance or flying hospital of the United States Army.

So often has the thought been repeated to me that I am advocating a double-headed command, that I again feel called upon to state that I have insisted and still insist that the command continue to rest in the line where it belongs. I do, however, advocate that the Medical Department shall be made responsible for the sanitary condition of the army, and that penalties be attached for failure to avoid unsanitary conditions; that the right shall rest at all times in the line of the army to take this responsibility from the shoulders of the Medical Department to their own, taking with the responsibilities the penalties provided; that a full justification for their action shall always be the presence of the enemy and the dictation of military necessity.

Dr. J. C. Oliver moved that a copy of Mr. Hay's bill be sent to the Committee on National Regulation of the Ohio State Society with the endorsement of the Academy of Medicine of Cincinnati. Carried.

CALIFORNIA ACADEMY OF MEDICINE.

Regular Meeting, held at San Francisco, September 24.

Dr. D. W. Montgomery in the Chair.

Dr. Dudley Tait showed the necropsy specimens from a patient upon whom he had made a gastrostomy for cancer of the esophagus. The method employed (Poirier's operation) was briefly as follows: Incision through the rectus under local anesthesia; withdrawal of a cone of the muscular wall of the stomach and fixation of basis of the cone to the parietal peritoneum. A small opening is made at the summit of the cone, penetrating only the two outer layers of the stomach. This is easily done, for when the stomach wall is held between the thumb and index finger the mucous layer rolls away from the outer layer. The mucous layer is then pushed inwardly by blunt dissection, which is always bloodless. A small opening is made into the dome of mucous layer thus formed and a number fourteen or eighteen French catheter introduced. Stitching the edges of the outer cone to the skin, and closure of the remainder of the wall completes the operation, which seldom requires more than ten or fifteen minutes. The result in Dr. Tait's case was excellent; for eight months there was no leakage, and after that, leakage occurred only during intervals of gastric disturbances as manifested by hypersecretion and hyperacidity. The patient was able to take food—liquid and solid—by mouth shortly after the operation and continued doing so for four and a half months. Death from pulmonary congestion occurred thirteen months after the gastrostomy. The specimen showed the disappearance of everything resembling a canal. It is more than probable that this condition occurred early and that the continence was due to the folds of mucous membrane converging at the orifice in the stomach.

After having made seven gastrostomies by different methods, Dr. Tait gave preference to the valvular methods, among which he mentioned Fontan's and its modification by Poirier. Whatever be the method adopted the stomach opening must be very small, and in the majority of methods the tube should be introduced only at the time of feeding. Operation in two stages was dangerous as a long list of complications had demonstrated. Cocain anesthesia was a great improvement. Dr. Tait advised getting the patient up as early as the third day. Roux, of Lausanne, insisted strongly on this proposition in all of his cases of gastric surgery. The return of permeability of the esophagus after gastrostomy was due to the gradual disappearance of the fibro-stenotic process involving the tissues contiguous to the neoplasm. A similar condition was found in rectal growths after colostomy. Dr. Tait spoke briefly of experimental work he had done in view of permitting the patient to take food by the mouth in cases of stricture of the esophagus. The plan consisted in anastomosing the greater curvature of the stomach to a point on the esophagus situated above the stricture. He found that traction on the cardia invariably caused grave respiratory changes, although it was possible to dissect free and bring down a certain portion of the esophagus. Operation from behind was entirely unsuccessful.

Dr. Howard Morrow presented a man with a sarcoma on his forehead. The growth began two years ago, in the skin, at the root of his nose and was removed by a paste. Two months ago it reappeared and now extends within a half inch of the inner canthus of the left eye. The entire growth is in the subcutaneous tissue and only adherent to the skin at the point of the former scar. The patient was brought before the Academy to get the opinion of the members in regard to the best means of treatment.

Dr. H. M. Sherman said that he had never had to deal with a tumor of that character, in that location, but it did not seem to him that it would be difficult of removal as all the nodules were movable. It was possible that the growth was deeper than one would expect. He referred to the use of Coley's fluid in the treatment of such growths, and the recent publication of a paper by Coley, which cited a number of cases where satisfactory microscopic diagnoses were made, and under the use of the mixture the tumor disappeared. He thought we could not shrug our shoulders at a paper of that kind. Wyeth has stated that an incision could be made over the tumor and the tumor bathed in the fluid, but he thought it was best to remove these masses, and if some were found in front of the frontal sinus they still would be accessible for the use of Coley's fluid.

Dr. H. A. L. Ryfkogel said he had watched three cases where Coley's fluid had been used, but none of the cases were spindle-cell sarcomas. He thought it was advisable to use it for the prevention of recurrence.

Dr. Morrow also presented a man with a chancre on the tip of his tongue, of two months' duration. One week ago a typical roseola appeared on his chest. This patient was presented on account of the unusual position of the primary sore.

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Dr. G. Caglieri, in discussing Dr. Gross's paper, stated that he did not think the author had shown any advantage in this method, and he thought there were decided objections to it; he thought the injection always produced some pain, and sometimes violent pain. Six weeks ago a man came to him suffering from marked syphilitic manifestations, who had just given up treatment by another physician because he said he could not stand the pain of these intra-muscular injections. Other methods of treatment he thought were equally as good and not so painful. Of these the intra-venous injection method was probably the best. It was more soothing than the former and not such rigid care was required. He described the technic of the injection and claimed that they were very easy of execution. He used the 1 per cent. solution of cyanid of mercury in 20 m. doses daily for ten days, and then increased to a 2 per cent. solution, gradually lengthening the period between these injections until it is used once a week.

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Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

Treatment of Cough and Pain in Tuberculosis.

The following is recommended in *Amer. Med.*:

℞.	Aq. Aurantii flor.	℥iv	128	
	Syr. chloralis			
	Syr. morphinæ, āā	℥i	32	
	Aq. laurocerosi	ʒiii	12	

M. Sig.: One dessertspoonful every hour.

Catarrhal Conditions of the Female Genital Tract.

The following has been highly recommended as a very useful general application to the mucous surfaces:

℞.	Ichthyol	ʒi	4	
	Acidi borici	ʒss	2	
	Glycerini	℥i	32	

M. Sig.: To be applied locally.

The surfaces having been thoroughly cleansed they should be painted with the foregoing preparation, and when the cervix is involved, a tampon saturated with this solution may be placed *in situ* and allowed to remain for fifteen or twenty hours.

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Lafond, according to the *New York Med. Jour.*, prescribes calcium chlorid in daily amounts of from 20 to 30 grains by the mouth, using the following:

℞.	Calcii chloridi	gr. cxx	8	66
	Syrupi simplicis	℥ii	64	
	Aquæ	℥vi	192	

M. Sig.: One soupspoonful twice daily for eight days, beginning one week before the expected period.

M. Dalché recommends the following in the form of a pill:

℞.	Ergotin	gr. iss		09
	Quininæ sulph.	gr. 1/3		02
	Pulv. digitalis	gr. 1/6		01
	Pulv. colæ q. s.			

M. Ft. pil. No. i. Sig.: Take one such pill three times a day, beginning three or four days previous to the period and continuing throughout the flow.

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Lemoine, in *Bul. Gén. de Thér.*, recommends the use of sodium phosphate, administered subcutaneously, stating that it is of service in supplying the phosphoric acid lost by the nervous system. He prescribes it as follows:

℞.	Sodii phosphatis	gr. xlv	3	
	Sodii chloridi	gr. xxx	2	
	Aq. destil.	℥iii	96	

M. Sig.: Inject 30 to 60 *minims* every other day.

Treatment of Gonorrhea.

As an injection the following is recommended:

℞.	Bismuthi subgal.			
	Pulv. acaciæ, āā	ʒii	8	
	Aq. destil.	℥iii	96	

M. Sig.: Use as an injection every two hours.

The following is employed by Cabot:

℞.	Plumbi acetatis			
	Acidi tannici			
	Zinci sulphatis			
	Cupri sulphatis, āā	gr. ii		12

M. Fiat tabella No. i. Sig.: Dissolve one such tablet in four ounces of water and use as an injection.

Treatment of Diabetic Pruritus Pudendi.

The physician should always look for diabetes, according to the *New York Med. Jour.*, whenever the pruritus is persistent and does not depend upon obvious local causes. In addition to the diet, if sugar is found in the urine, hot boric acid lotions are recommended:

℞.	Acidi borici	℥iss	48	
	Sodii boratis	gr. lxxv	5	
	Aq. destil.	Oii	960	

M. Sig.: Apply locally as hot as can be borne.

Specific Iritis.

The following is recommended to be given internally in cases of syphilitic iritis:

℞.	Hydrarg. biniodidi	gr. vi		36
	Potass. iodidi	ʒiss	6	
	Aq. destil	℥ss	16	
	Syr. aurantii q. s. ad	℥iii	96	

M. Sig.: One teaspoonful three times a day after meals.

Treatment of Appendicitis.

Prof. Bourget, as noted in *Merck's Archives*, outlines the following treatment for appendicitis when once it becomes established: The patient is put on a plain diet, and one-half an ounce of castor oil with 15 grains of salacetol (a salicylic acid derivative) is administered daily. Lavage of the stomach and of the lower bowel is productive of good. A quart of water containing some antiseptic solution may be introduced into the rectum. From three to eight ounces of olive oil may be injected with this enema. The author uses ichthyol in the above enema in the strength of 4 to 1000. The first two enemas ought to be expelled entirely soon after being injected; later a small quantity should be retained. The enemas may be given morning and evening. During the interval flaxseed poultices are to be supplied over the right iliac region, and if tumor is large five to six leeches are indicated. After two or three days of this treatment the castor oil is replaced by salines as follows:

℞.	Sodii bicarb.	ʒss	2
	Sodii phos.	ʒss	2
	Sodii sulph.	ʒss	2
	Aquæ	Oi	192

M. Sig.: Five ounces three or four times a day.

Dr. Bourget is of the opinion that if the foregoing outline of treatment can be properly carried out that a good number of these cases of appendicitis would escape the surgeon's knife.

Treatment of Ulcers with Camphor.

Schulze, in *Clin. Moderna*, advises the following in the form of an ointment:

℞.	Pulv. camphoræ	gr. xv	1
	Zinci oxidi	ʒiiss	10
	Adipis	℥i	32

M. Sig.: Apply locally; or:

℞.	Pulv. camphoræ	gr. xxx	2
	Zinci oxidi	℥i	32
	Olei olivæ	℥i	32

M. Ft. unguentum. Sig.: Shake and apply locally; renew three times a day.

Combination of Trional and Paraldehyde as a Hypnotic.

Rapiteau, as noted in *Amer. Med.*, has observed that the combination of trional and paraldehyde gives a new hypnotic which is four or five times more active than trional alone, and which may be employed for a great length of time without the fear of forming a habit or of cumulative effects. He recommends its administration according to the following formulæ: First make a normal solution of the two drugs as follows:

℞.	Trional	gr. xv	1
	Paraldehyde	gr. xxx	2
	Olei amygdalis dulcis	℥ss	16

Mix the trional and paraldehyde, then add the oil and obtain a solution in a water bath.

As a draught:

℞.	Sol. trional et paraldehyde (normal)	℥iss	48
	Mucilaginis	℥iii	96
	Syr. pruni virg.	℥ss	16

M. Sig.: One tablespoonful at bedtime in cases of insomnia.

Each tablespoonful of the foregoing will contain 5 grains of sulphonal and 10 grains of paraldehyde.

The following is serviceable, to be given per rectum:

℞.	Sol. trional et paraldehyde	ʒii-iv	8-16
	Ovi vitelli uni		
	Lactis	℥ivss	144

M. Sig.: At one injection for an adult. In the form of a suppository:

℞.	Trional	gr. iii	20
	Paraldehyde	gr. vi	40
	Ol. Theobromæ	ʒi	4

M. Ft. suppository No. i. Sig.: To be given at night for an adult. For a child these preparations may be given in the following proportions:

℞.	Trional	gr. ¾	05
	Paraldehyde	gr. iss	09
	Ol. Theobromæ	gr. x	66

M. Ft. suppos. No. i. Sig.: At bedtime.

To be given in a capsule either to children or adults in the proper-sized doses, the following form of administration is recommended:

℞.	Trional	gr. ¾	05
	Paraldehyde	gr. iss	09
	Ol. amyg. dulcis	gr. x	66

M. Ft. cap. No. i. Sig.: One capsule three to six times a day.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

American Medicine (Philadelphia), October 12.

1 Uric Acid Fallacies. Frank Billings.
2 A Case of Anthrax of the Face; Operation; Recovery; With Exhibition of Patient. W. B. Platt and H. C. Ohle.
3 *The Diagnosis of Primary Laryngeal Tuberculosis. P. S. Donnellan.
4 Fibrin in the Blood. Robert L. Watkins.
5 *Kidney-Stone Diagnosis and Treatment. Donald Macrae, Jr.
6 A Fatal Case of Tetanus, Treated with Antitoxin. Louis C. Ager.
7 *The Lane Lectures on the Social Aspects of Dermatology. Malcolm Morris.

Medical News (N. Y.), October 12.

8 The Endowment of Medicine. Malcolm Morris.
9 *The Influence of the Colorado Climate upon Pulmonary Hemorrhages. S. G. Bonney.
10 *The Tuberculosis Question. H. Arrowsmith.
11 The Prevalence and Treatment of Tuberculosis Among the Poor. H. L. Fancher.
12 *The Crowding of Consumptives into the Municipal General Hospitals. Wm. Ridgely Stone.
13 Tuberculous Otitis Media, Mastoiditis and Meningitis in an Otherwise Apparently Healthy Adult. Brief Report of a Case. James F. McCaw.
14 *The Tuberculin Test; Cases in Which It Seemed Justified and Decisive. W. E. Casselberry.

St. Louis Medical Review, October 12.

15 *Is Cesarean Section Justifiable in the Treatment of Placenta Previa? E. Gustav Zinke.

Medical Record (N. Y.), October 12.

16 *Panhysterokolpectomy: A New Prolapsus Operation. George M. Edebohls.
17 *Strangulated Hernia in Infants. Charles N. Dowd.
18 *A Study in Heredity in Its Relation to Immunity and Selective Activity in Tuberculosis. Herbert M. King.
19 Epilepsy; Its Etiology and Treatment. J. L. Bowman.

Philadelphia Medical Journal, October 12.

20 *A Case of Gunshot Wound of the Kidney and Stomach. John B. Roberts.
21 *A Case of Gunshot Wound of Stomach, in Which Patient Recovered. G. W. Penn.
22 Partial Gastrectomy for Hemorrhagic Ulcer. L. J. Hammond.
23 A Case of Tubercular Ulcer of the Stomach. Erwin Fischer.
24 Address in Mental Disorders at the Pennsylvania State Medical Society, 1901. Robert H. Chase.
25 *The Progressive Muscular Atrophies. Edward E. Mayer.
26 *Post-diphtheritic Urticaria. Jas. J. Walsh.

New York Medical Journal, October 12.

27 *The Lane Lectures on the Social Aspects of Dermatology. Malcolm Morris.
28 *The Tonsils. Robert Levy.
29 A Case of Peliosis Rheumatica (Schönlein's Disease). Fairfax Irwin.
30 The Growth of New Bone from Periosteum. J. Herman Branth.
31 Laryngology and Its Place in Medical Education. (Concluded.) Henry L. Swain.
32 On the So-called Gluten and Diabetic Foods of Commerce. H. C. Sherman.

Boston Medical and Surgical Journal, October 10.

33 *A Brief Résumé of the Life and Work of Ambrose Paré. (To be continued.) Charles Greene Cumston.
34 *Cretinism. Charles S. Millet.
35 *Association of Anemia, with Chronic Enlargement of the Spleen. (Continued.) Arthur H. Wentworth.
36 Hernia Reduced "En Bloc;" Operation and Relief of Internal Strangulation. C. A. Porter.
37 A Case of Intussusception; Resection of Fifty-six Inches of Small Intestine; Recovery. F. G. Balch.
38 Two Cases of Intestinal Obstruction Due to Constricting Bands. John W. Elliot.

Cincinnati Lancet-Clinic, October 12.

39 *Fibrinous Bronchitis. James M. French.
40 *Nephrolithiasis: Its Diagnosis and Surgical Treatment. Joseph Ransohoff.

American Practitioner and News (Louisville, Ky.), September 1.

41 *The Puerperium. John G. Cecil.
42 *Hip-joint Amputations; With Report of a Case. William O. Roberts.
43 *Substance or Cell Life, and the Germ Considered from the Standpoint of Natural Phenomena. U. V. Williams.

44 *Instrumental and Operative Obstetrics. Arthur T. McCormack.

45 Foreign Bodies Passed from the Rectum. W. O. Roberts.

Medical Age (Detroit, Mich.), September 25.

46 Pleural and Pericardial Effusions. James B. Brown.

47 Malaria: Its Causation and Prevention. Edward F. Wells.

Medical Fortnightly (St. Louis), September 25.

48 Multiple Pathologic Dislocations: (*a*) Hip, (*b*) Wrist. A. J. Steele.

49 Suprarenal Extract—Its Use in Medicine and Surgery. A. L. Adams.

50 Tuberculosis and Toxemia. T. Blank.

Northwestern Lancet (Minneapolis), October 1.

51 A Dermoid Cyst, with Twisted Pedicle and Hemorrhage Within the Sac, Complicating Pregnancy, with Removal and Recovery. L. A. Nippert and J. E. Moore.

52 Two Cases of Pin Appendicitis. James H. Dunn.

53 The Young Man in Medicine. H. K. Read.

54 Foreign Bodies in the Ear. Frank C. Todd.

Albany Medical Annals, October.

55 The Development of Medicine and Surgery in the Albany Hospital. Albert Vander Veer.

56 *A Case of Accessory Thyroid Tumor at the Base of the Tongue. Clement F. Theisen.

57 Adrenalin Chlorid. Burton S. Booth.

58 The Relation of Bacteriology to Medicine. J. A. Wilder.

59 Clinical and Pathological Notes (Vaccination, Etc.). J. M. Mosher.

Illinois Medical Journal (Springfield), October.

60 Treatment of Abortion. Charles B. Reed.

61 Glioma of the Brain; Recovery from the Operation and Present Status of the Patient. J. F. Percy.

62 Dilating Irrigations in the Treatment of Chronic Gonorrhea, with Exhibition of a New Dilating Irrigator. E. A. Fischkin.

63 Trichinosis. Joseph Brayshaw.

64 Rectal Fistula. J. Rawson Pennington.

65 Report of a Case of Typhoid Fever in a Syphilitic Female. Wm. H. Maley.

American Journal of the Medical Sciences (Philadelphia), October.

66 On the Clinical Aspects of Plague. Lewellys F. Barker.

67 The Pathology of Bubonic Plague. Simon Flexner.

68 The Bacteriology of Bubonic Plague. Frederick G. Novy.

69 *A Case of Malarial Nephritis, with Massing of Parasites in the Kidney. James Ewing.

70 *Influenza as a Causal Factor in Acute Mastoiditis, and the Early Treatment. James F. McCaw.

71 A Method for the Differential Modification of the Proteids in Percentage Milk Mixtures. Thompson S. Westcott.

Pediatrics (N. Y.), October 1.

72 Physical Culture in Children—The Objects to Be Attained. John Madison Taylor.

73 Ringworm and Favus. A. D. Mewborn.

74 Chronic Intestinal Obstruction, with Report of a Case. D. S. Hanson.

Buffalo Medical Journal, October.

75 *A Plea for the Broader Treatment of Epilepsy. William P. Spratling.

76 Removal of the Cecum for Carcinoma; Recovery. W. L. Conklin.

77 *The Choice of an Anesthetic for Children. Edward J. Wynkoop.

78 The Two Glass Test. J. Henry Dowd.

79 Hospitals in the Smaller Towns. A. L. Beahan.

80 *The Therapeutic Value of the X-Ray in Lupus Vulgaris. Clarence A. Greenleaf.

81 A Case of Obstinate Hiccough and Its Successful Treatment. J. A. Durrent.

Canada Lancet (Toronto), September.

82 *The President's Address, Canadian Medical Association. H. H. Chown.

83 The Winnipeg Meeting of the Canadian Medical Association. George Elliott.

84 The Pathology of Gastric Ulcer. H. B. Anderson.

85 Empyema: Its Medical Aspects. R. Ferguson.

Cleveland Journal of Medicine, September.

86 *Infrapubic Opening of Pelvic Appendiceal Abscesses. J. F. Baldwin.

87 Some Facts Regarding One Hundred Consecutive Obstetric Cases. F. S. Clark.

Pennsylvania Medical Journal (Pittsburg), September.

88 Evidences of Insanity. M. S. Guth.

89 *Modern Counter Prescribing. John B. Donaldson.

90 Recent Advances in Rectal Surgery. William M. Beach.

91 Treatment of Typhoid Fever. D. R. Kunkelman.

92 A Case of Pseudo-hermaphrodism. H. F. McDowell and C. H. Henninger.

Canadian Journal of Medicine and Surgery (Toronto), October.

93 *Address in Medicine. J. R. Jones.

94 Orthopedic Treatment of Deformities and Disabilities Resulting from Diseases of the Nervous System—Special Reference to Tendon Transposition. B. E. McKenzie.

95 Nose and Throat in General Practice. John Hunter.

96 The Sanatorium Treatment of Tuberculosis. Arthur J. Richer.

97 A Trip as Surgeon with the Newfoundland Sealing Fleet. Wm. F. Adams.

Journal of Cutaneous and Genito-Urinary Diseases (N.Y.), October.

98 *The Cause of the Streaks in Nevus Linearis. Douglas W. Montgomery.

99 A Case of Dermatitis Vegetans. M. B. Hartzell.

100 On the Treatment of Certain Deep-seated or Rebellious Forms of Disease of the Follicles, More Particularly by Intrafollicular Methods. Edward B. Bronson.

Woman's Medical Journal (Toledo, Ohio), August.

101 Marie Josepha Mergler. I. N. Danforth.

102 Dr. Marie J. Mergler as Woman and Physician. Eliza H. Root.

103 Diseases of the Respiratory System in Infancy. Mary E. Phelps.

International Medical Magazine, September.

104 *On the Care and Treatment in Convalescence from Functional Nervous Disease. F. Savary Pearce.

105 Fatal Polypoid Colitis Resulting from Administration of Mercurial Inunctions. Wm. Egbert Robertson.

106 Nephrectomy for the Removal of Calculus of the Ureter. W. Wayne Babcock.

107 The Treatment of Congenital Club-foot. James K. Young.

108 Chronic Diarrhea Due to Rectal Disease. (Continued.) Samuel G. Gant.

109 The Etiology and Symptomatology of Constipation, Including the Differential Diagnosis Between Atonic and Spastic Constipation. Boardman Reed.

Fort Wayne Medical Journal-Magazine, September.

110 Inflammation and Its Treatment. D. J. Loring.

111 Chronic Urethritis: Its Diagnosis and Treatment. H. A. Klussman.

112 What Can We Do for Our Cataract Cases? G. W. Van Benschoten.

The Laryngoscope (St. Louis), September.

113 The Nose and Throat in the History of Medicine. (Continued.) Jonathan Wright.

114 *Treatment of Certain Purulent Conditions of the Antrum of Highmore Through the Natural Openings. Norval H. Pierce.

115 *Remarks on the Diagnosis of Adenoids in Infancy. Walter F. Chappell.

116 Differential Diagnosis of Affection of the Eustachian Tube and Spongifying of the Labyrinth. J. Holinger.

117 Diseases of Stenson's Duct and the Treatment. Carl E. Munger.

American Medical Compend (Toledo, Ohio), October.

118 *Infection from the Bacillus Aerogenes Capsulatus; Report of a Case. Julius H. Jacobson.

119 Some Points Regarding Renal Tuberculosis. B. Becker.

120 Pharmacologic Action of Drugs. E. M. Houghton.

121 Relation of the Alumni to the College Clinic. C. S. Miller.

122 Urethritis or Gonorrhea. Charles Louy.

123 May a Hospital Steal Cases? A. L. Benedict.

Indiana Medical Journal (Indianapolis), October.

124 *Pernicious Anemia. Wm. Charles White.

125 Dermatitis Universalis; Report of a Case. F. P. Eastman.

126 Hemorrhoids. J. N. Jerome.

127 How the Evolution of Senses Expands the World. John Fiske.

128 *Cold as a Cure for Tetanus. Joseph G. Rogers.

129 Stomach Nine Months in the Thoracic Cavity with Knife Wound of the Diaphragm; Report of Autopsy. F. A. Morrison.

130 Concerning Surgery in Berlin. F. W. Foxworthy.

Hot Springs Medical Journal, September.

131 *Drainage in Abdominal Surgery. J. W. Long.

Carolina Medical Journal (Charlotte), September.

132 Beri-beri. Gideon M. Van Poole.

133 Intestinal Diseases of Children. Howard Thompson.

Medical Dial (Minneapolis), October 1.

134 *A Modified Gastrostomy Operation. F. T. Meriwether.

135 Bacteriological Report on Mississippi River Water. J. Frank Corbett.

Kansas City Medical Index-Lancet, October.

136 Cardiac Therapeutics. A. E. King.

137 Intestinal Diseases of Children. J. F. Aldrich.

138 Physical Life and Perversion of Physical Acts in Relation to the Same, with a Recital of a Few Cases. Stanley Newhouse.
139 Medicolegal Cases. N. A. Drake.
140 The Preventive and Curative Treatment of Tuberculosis. E. C. Underwood.

New Orleans Medical and Surgical Journal, October.

141 *Widal's Reaction in Typhoid Fever. O. L. Pothier.
142 *Spinal Analgesia. Sidney P. Delaup.
143 Vital Statistics in Louisiana. G. Farrar Patton.
144 Boards of Lunacy, with Especial Reference to the Examination of Patients for Commitment in the Insane Asylum. C. D. Simmons.
145 First Help in Cases of Contagious Diseases. C. L. Horton.
146 A Clinical Report of a Case of Spina Bifida. T. E. Schumpert.

Columbus Medical Journal, September.

147 The Cardiac Complications of Rheumatism. Edgar M. Hatton.
148 A Morning in a Peking Clinic. John Inglis.
149 Anodynes in Children. Richard R. Pettit.
150 Carcinoma of the Tongue. W. H. Chambers.

Georgia Journal of Medicine and Surgery (Savannah), September.

151 Pathology and Treatment of Anemia. W. E. Fitch.
152 *Our Recent Epidemic of Smallpox and Vaccination. F. J. Runyon.
153 *Report of Two Cases of Hemoglobinuric Fever. Walter Shropshire.
154 *The Management of Fevers. I. N. Love.

Texas Medical News (Austin), September.

155 The Treatment of Dysentery. E. A. Malsch.
156 A Case of Mycosis. E. P. Daviss.
157 Smallpox. S. S. Watson.
158 Acute Dysentery, with Special Inquiry as to the Use of Magnesium Sulphate. Ira D. Clemons.

Vermont Medical Monthly (Burlington), August 25.

159 Contribution to the Treatment of Tuberculosis by Means of Static Electricity, Inhalations by Compound Ozone and Immediate Absorption of Medicine Through the Skin. F. T. Labadie.
160 The Treatment of Suppuration of the Middle Ear. H. Edwin Lewis.

Medical Standard (Chicago), October.

161 The Commoner Diseases of the Eye: How to Detect and Treat Them. Casey A. Wood and Thomas A. Woodruff.
162 A Surgical Clinic (Intraperitoneal Abscess, Etc.). John B. Murphy.
163 Cataract. J. G. Huizinga.
164 The Eye and the General Practitioner. Edward B. Taylor.
165 The Rhinological Corner. Edwin Pynchon.
166 The Animal Cell and Its Therapeutic Applications. J. Rawson Pennington.

AMERICAN.

3. **Laryngeal Tuberculosis.**—Donnellan concludes that primary laryngeal tuberculosis is hardly as rare as has been generally supposed and is quite explicable from a pathologic standpoint. He reviews the literature briefly, notices special points of diagnosis, etc., and remarks on the importance of bacteriologic and histologic examinations.

5. **Kidney Stone Diagnosis.**—The etiology, symptoms, etc., are first noticed by Macrae, who sums up the following as the principal aids as regards the diagnosis: General symptoms, local and reflex; examination of the urine, chemic, macroscopic and microscopic with the centrifuge; percussion over the affected side; the ureteral catheter and sound; inspection of the bladder and ureteral orifices; the segregator. In spite of the possible exception of the actual finding of a stone in the urine, we are not absolutely convinced that we have to deal with a nephritic calculus. Still another question arises as to whether we have one or more stones, and whether, if present, they are in the ureter, kidney substance, etc. He calls attention particularly to the importance of the *x*-ray, and believes the time has arrived when it becomes our duty to submit each and every case of an affection pointing to a pathologic nephroureteral condition to the *x*-ray. A few exceptions to this rule may be made in cases of nephritis following the exanthems, but even here, if the condition exists, the possibility of secondary calculi must not be overlooked. He does not believe in ureteral catheterization as a routine practice and retrograde sounding of the ureter should, he thinks, be relegated to the past.

7.—See also ¶27.

9. **Pulmonary Hemorrhages.**—Bonney has made a statistical study of his cases and reports his observations with special reference to the influence of Colorado climate on hemorrhagic cases of tuberculosis. His conclusions are: 1. Hemorrhage by itself, save with a few exceptions, furnishes no criterion upon which to base a choice of climate, the indications for high altitude in uncomplicated and in not too-far-advanced cases being highly imperative independent of this single manifestation. 2. An exceedingly small proportion of recurrences may be expected in Colorado, although not necessarily reflecting accurately the degree of ultimate improvement secured. 3. Recurrences are more likely to result, and that quickly, in those cases with hemorrhage immediately preceding arrival, and hence the wisdom of a short delay following the hemorrhage before leaving home and unusual precautions as regards rest upon arrival. 4. Primary hemorrhages are comparatively rare in Colorado and usually take place incident to a rapid, progressive, destructive change in cases already with hopeless prognosis, or as a natural result of some external assignable cause, which under proper régime could be avoided. 5. Hemorrhage, while less likely to occur in Colorado than at sea level, is nevertheless, as a general rule, more severe and associated with greater shock. 6. The avoidance of hemorrhage, particularly in the early months of Colorado life, demands a most rigid compliance with detailed instructions.

10. **The Tuberculosis Question.**—Among the subjects discussed by Arrowsmith are those of the heredity of the disease, which he seems to think is effective to a greater extent than many now suppose; at least this is the case as to hereditary predisposition. The method of infection which is alone capable of adequately explaining all the phenomena is that of ingestion, perhaps, in some cases, or a combination of inhalation and ingestion. Few people breathe continuously through their noses and a large proportion of the matters suspended in the inspired air is naturally deposited on the posterior wall of the pharynx and thence inevitably carried downward in the act of swallowing. The gastric disturbances which almost always antedate tuberculosis furnish the opportunity for the bacillus to enter the system by impairing the protective power of the normal stomach secretions. Infected food stuffs are also mentioned in this connection. The sum of our knowledge relative to the antecedent causes of phthisis now seems to be that, given a favorable soil, however produced, and the proper exposure, tuberculosis will result. Just what this soil is, is hard to say, but predisposition may be either inherited or acquired. The pre-tuberculous state is mentioned and it seems to him that all of us who have not tuberculosis, may be said to be in this condition. He fails to see in what the prodromal stage of phthisis differs from that of any other debilitating illness before the characteristic symptoms have appeared. He does not favor the use of tuberculin for diagnostic purposes, considering it not entirely reliable and possibly risky. The actual symptoms on which we may place reliance in reaching a conclusion as to the existence of tuberculosis are enumerated in the following order: Insidious perversion of general nutrition, with gastric and intestinal disturbance, which does not seem to have any distinctive characteristics. A persistent tachycardia is also an indication of commencing trouble in many cases, but one of the weightiest and most observable diagnostic symptoms in his experience is some abnormal variation of the temperature. He doubts the possibility of afebrile tuberculosis. When there is a persisting abnormal temperature range, there may be a question between tuberculosis and some form of malaria, and external applications of guaiacol will sometimes clear up the doubt by relieving the fever of tuberculosis, or leaving that of malaria uninfluenced. Thoracic inspection is of little account in the early stages, though a misshapen, unnaturally small-sized chest is a presumptive indication along with other signs. The apical involvement in the beginning of tuberculosis being to the basal in the ratio of 1 to 500, careful attention should be given to the condition of apex, and while auscultation of the anterior surface may be entirely negative, yet in the supraspinal fossa and along the inner bor-

der of the scapula we may find what we are in search of. In some cases small doses of iodin 3 to 5 gr. three times a day will help to determine the condition. Physical conditions are sometimes apparent during menstruation which are absent at other periods. Unnaturally clear transmission of heart sounds without consolidation is suggestive. Skiagraphy will be a much more prominent diagnostic measure in the future, he thinks, than at present. Occasionally laryngoscopy will reveal the trouble. He says, to recapitulate, that we are justified in assuming tuberculosis on the evidence of otherwise unexplained gastric and nutritive disturbances with persistent tachycardia and fluctuations of temperature, although slight, especially with an increase after exertion—particularly if the personal history gives a coloring probability. We may be absolutely certain of our diagnosis if in addition the slight physical signs mentioned are discoverable, and notwithstanding a history of cough and possibly hemoptysis, we may presumptively discard the probability of tuberculosis if these phenomena are absent. The prognosis of pulmonary tuberculosis is perhaps the most uncertain thing in medicine. He quotes Trudeau's statistics as showing the favorable prognosis in incipient tuberculosis, but the surest way to cure the disease is to prevent it and that the possibility of this is not Utopian is shown by the decrease where sanitary regulations are now enforced. A very important matter is that a patient should be assured of the protection given by an approximately normal condition of the upper respiratory tract. Catarrhal conditions, while they do not run into consumption, increase the liability to it. He condemns the indiscriminate prescribing of change of climate, notices the great success of outdoor life, and mentions a few remedies and methods, such as serum therapy, urea, etc., and protests against the use of cod-liver oil, heroin or other opium derivatives and cough syrups. He thinks, for the relief of cough, that the laryngeal syringe is a better method than any other that may be had. Antiseptic inhalations are of great additional utility.

12. **Consumption in General Hospitals.**—The dangers of crowding general hospitals with consumptive patients is remarked by Stone, who reports cases where tuberculosis seems to have been contracted from such associations. The patients in these wards are in a low state of vitality, especially susceptible to infection, and such infection has taken place.

14. **The Tuberculin Test.**—Casselberry reports a case which seems to him to indicate the decided value of this test as demonstrating the existence of tuberculosis in its bacillary stage. In cases of positive reaction, however, we must bear in mind syphilis, and also certain cases of sarcoma and carcinoma.

15.—See abstract in The Journal of September 28, p. 856.

16. **Panhysterokolpectomy.**—Complete prolapsus of the uterus and vagina is best treated, according to Edebohls, by panhysterokolpectomy, of which the essentials consist in complete removal of the uterus and vagina followed by operative obliteration or columnization of the bed of the genital tract. The tubes and ovaries are not disturbed if healthy; if diseased, they are removed. Obliteration and columnization of the bed of the removed uterus and vagina is effected by means of from seven to nine buried purse-string sutures of chromicized catgut placed about two to two and a half centimeters apart, and running parallel to each other. Each suture gathers the raw surfaces from the periphery in circular fashion and draws or purses them together in the median line. It is buried by being pushed upward toward the abdomen, while the next suture is being tied beneath it. The effect of the completed operation is to build a solid pelvic floor ten to fifteen centimeters in depth from peritoneum to perineum, and to establish broad apposition of the base of the bladder and the anterior surface of the rectum, conditions similar to those obtaining in the male pelvis. The patient is kept in bed for a week after operation. Recurrence of prolapse is impossible after a correctly and successfully performed panhysterokolpectomy. The operation is indicated in the severest cases of total prolapse, and more especially where other operative procedures have been tried and failed. The interference with further marital relations must be explained, and accepted by the patient prior to operation. In the case of a married woman the husband must also be consulted. Four cases have thus far been operated upon by the author of the operation, all with perfectly satisfactory results.

17. **Strangulated Hernia in Infants.**—Dowd reports a case of a child three months old in which there had been evidence of hernia with symptoms of strangulation, but the hernia was reduced apparently "en bloc" without relief of symptoms and relief was gained by operation. He calls attention to the difficulties of diagnosis in some of these cases. Babies can not talk, and cry for other things as well, and he analyzes the case to show the importance of different symptoms, which he gives in the following order: 1. Tumor; 2, vomiting; 3, constipation; 4, difficulty of urination; 5, restlessness and apparent pain; 6, constitutional depression. Early operation in all these cases has been apparently the greatest safeguard.

18. **Heredity in Tuberculosis.**—King holds the view that tuberculosis produces a relative immunity in the offspring, and that the heredity of the disease is correspondingly diminished. He thinks also that in his observation the average duration of disease in cases where there have been tuberculous parents has been longer and protection should be greater than in patients with no such ancestry. The conclusions which he offers are: 1. The percentage of consumptives having a tuberculous parentage is actually smaller than that having a non-tuberculous parentage, and much smaller than would be more than accounted for by the additional risk of infection to which the former class is subjected. 2. Tuberculosis in the parents renders to no inconsiderable extent an immunity to the disease in the offspring, an immunity which of course is but relative, and not sufficiently protective, but still demonstrable, as is shown by increased resistance to the progress of the disease and increased tendency to recover among this class.

20. **Gunshot Wounds of the Kidney.**—In a case reported by Roberts there was a self-inflicted pistol-shot wound in the front of the left breast, which passed through the depending mammary gland and then into the thorax. The bullet had missed the heart, perforated the diaphragm and injured the liver as it appeared at the time. There was no excessive shock, the pulse was slow, respiration rapid and temperature subnormal. Later, however, the temperature rose together with the respiration and pulse and the patient died after having been under observation about thirty-two hours. The postmortem revealed no injury to the thoracic viscera or intestines, but a groove-like wound was seen in the lower surface of the stomach, not perforating that viscus but perforating the upper end of the kidney, the bullet being found imbedded in the muscles of the back, opposite the first lumbar vertebra. Death was apparently due to slow bleeding of the wounded kidney and septic conditions of the wounded structures. The kidney wound was not suspected during life and operation was deemed hardly necessary.

21. **Gunshot Wound of the Stomach.**—Penn reports a case of gunshot wound of the stomach which was somewhat lower down than President McKinley's wound and was received when the stomach was full. The patient vomited freely as soon as shot, the vomitus consisting of the meal just eaten, together with quantities of clotted blood. He was fed exclusively on the mucilage of the cactus or prickly pear for fourteen days, which was allowed from the first, gradually returning to a full diet. There was never any decided rise of temperature and no evidence of peritonitis. The case is of interest as showing the unaided curative action of Nature occasionally in such cases.

25. **Muscular Atrophies.**—Mayer reports three cases illustrating the difficulties in the diagnosis of the different forms of this condition. One was apparently a case of fascio-scapular humeral dystrophy of the Landouzy-Dejerine type, but presenting certain peculiar features, it having run an acute course, being associated with pseudo-hypertrophy in the thighs and early appearance of contractures. The other two cases also present similar difficulties. He thinks we still cling to the idea of primary muscle disease in the want of more exact

knowledge as to the nervous involvement, which investigations have not yet satisfactorily demonstrated.

26. **Postdiphtheritic Urticaria.**—Walsh remarks on the occurrence of urticaria following the use of antitoxin to which it is credited, and reports a case in which urticaria followed a mild attack of diphtheria in which no antitoxin was used. He believes that careful study of the conditions produced by diphtheria itself will relieve the diphtheria serum from some of the accusations that have been made against it. It has been too much the custom to attribute every unusual symptom occurring after its administration to its agency, while some of these are undoubtedly due to anomalies in Nature's protective reaction against the toxins of the disease.

27. **Lane Lectures.**—This fifth lecture of Dr. Morris takes up the subject of tuberculous skin affections. He still recognizes the utility of the word scrofula as indicating a special delicacy of tissue, making it vulnerable beyond what is seen in the healthy state. He thinks the inoculation of lupus is a possible accident of vaccination, though it must be very rare. Other forms of skin tuberculosis, such as postmortem warts, the possibility of infection from ritual circumcision, tuberculous ulcers, scrofuloderma, lichen scrofulosorum and the various forms of tuberculides are also noticed.

28. **The Tonsils.**—Levy considers that the local causes of tonsillar disease are more important than the symptomatic causes and that the proper management of local conditions would prevent subsequent diseases. When the tonsils appear enlarged it has been the practice to remove them. He asks how we can preserve the protective functions which so many good authors recognize and how we may overcome the conditions and the etiologic factors for which the tonsils are responsible agents. In the majority of instances, especially in adults, complete enucleation of the diseased tonsil should be performed. The best method for this in adults is, he thinks, the galvanocaustic snare and where this is impracticable complete dissection of the diseased tissues may be accomplished by properly-constructed galvanocautery electrodes. In children amygdalotomy has its uses and advantages, and only in those cases where recurrence after a former amygdalotomy has taken place or where there is a diseased condition without hypertrophy, such as is seen in adults, should the more difficult and radical procedure be undertaken. In conclusion he insists that no operation on the tonsils should be performed simply because the structures are not absolutely normal in appearance, but only when distinct and well-defined symptoms exist, referable to these organs as the obvious cause.

33. **Ambroise Pare.**—Cumston's article is an interesting historical account of the life and times of Ambroise Paré.

34. **Cretinism.**—Millet gives a brief account of the facts in regard to cretinism, and also reports a couple of cases which had been treated with thyroid with benefit, but not with complete relief.

35. **Splenic Anemia.**—As far as it appears in this issue, Wentworth's article is a continuation of the discussion of the literature of the subject.

39. **Fibrinous Bronchitis.**—French reports and illustrates a case occurring in his own practice and reviews the etiology—which is not so characteristic—pathology, symptoms, prognosis and treatment of the condition. He considers the prognosis always grave, especially in the extremes of life, and much more serious when it occurs in the course of other affections than in the presence of fair health. He uses carbonate of creosote, in which he thinks he is the pioneer. He was led to use this by his observation of its action on bronchial secretion in other affections and also by the suspicion that tuberculosis might be present in the case. Improvement began immediately after its administration, and while a single case does not demonstrate much and the dose was small, he mentions it as being of some possible value.

40. **Nephrolithiasis.**—Ransohoff notices the diagnosis, treatment, etc., of nephrolithiasis and considers that the tenderness elicited in renal colic on bimanual examination of the kidney is an almost distinguishing feature, even in cases where enlargement can not be felt. He also thinks that uranalysis will do much in the diagnosis, and that decrease in the urine is sometimes of importance. Hematuria is always present, though rarely profuse. While profuse hematuria may follow acute kidney-stone colic, it more generally points to intermittent hydronephrosis, acute exacerbation of a chronic nephritis, and above all to malignant disease. If the colic has passed, the second symptom-group appears, such as pain spontaneously, or caused by pressure, urine changes, and general symptoms indicating the progressive septic changes in the kidney before it has come to proportional enlargement. While no one of these is pathogenic, their grouping is generally such that a correct diagnosis can be made. Pressure pain is much more important than spontaneous pain. Microscopic hematuria in the urine is also of importance. We should also employ cystoscopy to exclude vesical disease and to observe the changes around the ureteral orifice. He has had little positive results with radiography, and has removed quite large stones in which the method failed, but he thinks that in the future he may be enabled to get some positive results. When the colic fails to be followed by the passage of stones the indications for operation are strong, the case is parallel to that of gallstone, and trouble may ensue at any time. We should not wait for suppurative pyelitis or pyelonephritis to compel an operation as a life-saving measure. Nephrolithotomy should be a routine operation; its mortality is low and he thinks that a longitudinal section made along the convexity of the gland is less likely to wound the large vessels, and it need not be longer than necessary to introduce the exploratory finger, and compression of the pedicle of the kidney may be employed for short periods without any harm to completely control the hemorrhage. Drainage is seldom required. When in consequence of irritation from, and secondary infection due to stone, the kidney is enlarged and sacculated, nephrotomy and drainage are the procedures to be adopted, though the results are not so favorable. Nephrectomy is reserved for extreme cases where the disorganization of the kidney is such that it can not be recovered from.

41.—See abstract in The Journal, xxxvi, p. 1725.

42.—Ibid., p. 1726.

43.—Ibid.

44.—Ibid., p. 1725.

56. **Accessory Thyroids.**—Theisen reports and illustrates a case where there was a large tumor nearly the size of a hen's egg situated at the base of the tongue in a patient who, when young, had a very well-marked goiter and in whom at the present time there is no thyroid perceptible in its proper place. The troublesome symptoms seemed to be due to the size of the growth, but it did not seriously interfere with respiration. It was considered inadvisable on account of its size to operate, but thyroid medication was tried without bad effects and the tumor seemed to gradually decrease. He reviews a number of cases reported in the literature and remarks on the peculiar fact that all cases of accessory thyroid thus far reported in this situation have occurred in women.

69. **Malarial Nephritis.**—Ewing found in 14 fatal cases of malaria seen mostly in Montauk in 1898, extensive degenerative changes in the kidney, once the lesions of hemaglobinuric malaria, but comparatively few or any parasites in the renal vessels. The case here reported, however, shows the clinical symptoms of hemoglobinuric nephritis, with partial suppression of urine, and gives clear microscopic evidence of extreme massing of parasites in the kidney, apparently contradicting Marchiafava and Bignami's deduction that the lesions are not due to such localization, but to some toxic substance eliminated through the kidneys. In this case there was no doubt that the renal lesions were the principal features and that the case was one of true malaria in which the hemorrhagic character was due to massing of these parasites. The extreme degeneration of the cortical tubules is also a peculiar feature. He concludes as follows from the literature and his own

observations: "Microscopical examination of the kidneys of fatal cases of malaria has, then, yielded evidence of three main types of acute renal lesions occurring in this disease. 1. Acute degeneration of toxic origin, often reaching a degree in which exudation of blood serum into the tubules is added. This lesion is responsible for the vast majority of the cases of albuminuria in malaria. 2. An extreme form of acute degeneration, with focal necroses, numerous hemorrhages, and exudation into the tubules of the blood serum and blood pigments. This lesion is seen in cases of hemoglobinuric malarial fever, and it has not yet been found associated with an excessive number of parasites in the capillary vessels. 3. Massing of parasites in the renal capillaries, with extreme degeneration of parenchyma cells, multiple hemorrhages, and exudation of blood serum into the tubules. It seems certain that this type of lesion can occur only in severe estivo-autumnal infections. There is anatomical evidence that in the pernicious estivo-autumnal cases, the three types of lesions may be variously combined, but no good reason for believing that with the benign tertian infection occurring in this latitude any other than the first type can exist."

70. **Influenzal Mastoiditis.**—McCaw calls attention to the frequency of mastoiditis immediately following epidemics of influenza consequent on tympanic infection, which is, therefore, tympano-mastoiditis. The cases seem to be slow in recovery, the clinical picture being one of a very active suppurative process in a tissue of low vitality. In the severer type of cases he believes that la grippe is responsible for more cases of acute suppurative mastoiditis than either scarlatina, measles or diphtheria. From Perez's experiments he makes the suggestion that we may have one inflammation due to inoculation of Pfeiffer's bacillus alone, whereas in the other variety it may be associated with pyogenic organisms, and the virulence of each may be increased. As regards treatment, his best results have been obtained in the hemorrhagic type by rest in bed, free catharsis, leeching in front of the tragus and over the mastoid, and from douching of the canal every two hours. He is well aware that this method of hot douching has been criticised, but it has not been followed by bad consequences and has given him the largest percentage of recoveries. In the suppurative cases he uses early and free incision of the drum, warm douching every two hours with cleansing processes, catharsis and, if this does not relieve the patient in 36 to 48 hours, the case will be one for surgical interference. The amount of destruction which may take place in a short time is very notable. He has seen the entire mastoid in a purulent and necrotic condition with involvement of the facial nerve and facial paralysis *in one week* from the first ear symptoms. When we feel satisfied that pyogenic disease of the mastoid exists, our duty is to open the cells and not try to palliate or abort. In conclusion he emphasizes that we have two distinct types: "1. The suppurative, which invades the tympanum, antrum, and cells almost simultaneously in an unusually virulent and destructive process, which calls for early surgical treatment and in which abortive measures are contraindicated. 2. The hemorrhagic, with very pronounced symptoms at first, but which yields readily to abortive measures, and, in the writer's experience, only about 5 per cent. go on to suppuration requiring radical interference."

75.—See abstract in The Journal of October 19, ¶143, p. 1068.

77. **Anesthetics for Children.**—Wynkoop reviews the opinions and facts as regards the action of anesthetics in children and comes to the general conclusion that ether can be used with greater safety than any other anesthetic, while the combination with nitrous oxid is of value. Ether alone has few contraindications if properly administered.

80. **X-Ray in Lupus Vulgaris.**—Four cases of lupus vulgaris treated by the *x*-ray are reported by Greenleaf, who finds that this is the most satisfactory treatment for the condition and that repair begins almost immediately, that the danger attending the treatment is minimal, that the surroundings and general condition of the patient are important elements in the ultimate results, and that cases not subjected to surgical treatment react rapidly and ultimately recover, whereas, cases that have been surgically treated, react in a degree of slowness depending on the extent of the previous surgical interference.

82.—See abstract in The Journal of September 14, p. 711.

86. **Pelvic Appendiceal Abscesses.**—Four cases of pelvic appendiceal abscesses are reported by Baldwin, who thinks their opening per vaginam or per rectum is the simplest and most natural procedure and will lead to temporary recovery. If the appendix continues to make trouble, its removal in an interval operation will be attended with an absolute minimum of risk, while to open such an abscess by abdominal incision and across the open peritoneal cavity causes most serious risk and if peritonitis is obviated by extensive packing there is an almost inevitable chance of hernia.

89. **Counter Prescribing.**—Donaldson finds the druggist is better equipped to do counter prescribing than ever before. He has on his shelf proprietary remedies that save him the trouble not only of compounding, but also of selecting. The patient makes the diagnosis and the druggist has the remedy mixed, labeled and guaranteed. He took the trouble recently to make a list from a druggist's shelves of the diseases treated by modern counter prescribing. He found there 18 sure cures for consumption, 22 for rheumatism, 12 for gonorrhea, and special remedies for other diseases such as diabetes, etc., together with numerous shotgun mixtures, called pain-killers, blood-purifiers, or system-renovators that cure all diseases. He says it would not do to say to our patients "do not use patent medicines" for they would think it selfish in those advising them. The only legislation man can conceive that would mend matters would be one to require manufacturers to put the ingredients on each package. The physician should avoid prescribing proprietary remedies in the original packages as it teaches patients to treat themselves and gives them the little knowledge that is often dangerous. There is no need of telling the patient what drugs he is taking. If you listen in a drug store to the people you can hear them ask for quinin, morphin, ergot, calomel, bromid of potash and dozens of remedies of which they have obtained knowledge through the physician. Poisonous or dangerous remedies should be ordered off the market. Among these he mentions a "female regulator" that is put on the market, which is an ideal abortifacient so far as drugs are capable of acting in that way.

93.—See abstract in The Journal of September 21, p. 742.

98. **Nevus Linearis.**—The cause of the streaks in nevus linearis is discussed by Montgomery, who reviews the various theories and reports a case. The view that seems most nearly to fill the requirements is, that nevus linearis originates at an early stage in the development of the fetus when the embryonic layers are still a plastic mass. The disturbing agent, whatever its nature, usually affects what will later become the papillary layer of the skin and usually falls on one or the other side of the median line. Imagining the affected cells or groups of cells to lie in the plastic cells like currants in dough one can see that such a group lying in the region which later becomes the back of the neck, might be pulled toward the median line when the skin closes over the neural canal, and its individual constituents become scattered along this line as the fetus elongates. Another group situated over the place where the limb will afterward bud out, would be stretched along this line with the budding limb, and the line would tend to follow all the twists and turns of the limb as it grew out, exactly as Kaposi has so graphically described. This view would explain the frequent unilaterality of the affection, and its occurrence along the fissures of the body, as along the branchial clefts. There are some objections to this view, but he concludes that, on the whole, it is the most probable one that can be offered.

104. **Convalescence from Functional Nervous Disorders.**—The management of the convalescent stage of functional nervous troubles is discussed by Pearce, who insists on the importance of mental methods, though not dwelling on this phase of the subject extensively. He thinks the patients must be schooled

or educated into self-control. The physical care, that is, the necessity of rest and of exercise to a limited degree, is also mentioned as important, and he thinks the most desirable forms of exercise in this stage of neural disorders are to be in a general way different from those of the ordinary routine of the patient's life; that is, keeping him away from his ordinary mode of thought and from thinking about self. If the patient can be kept off his feet to a certain extent it will be advantageous. As for the adjuvants to mental rest we have intestinal antisepsis, colon flushings, diet, hypernutrition, massage, electricity and avoidance of excitement.

114. **Antrum Abscess.**—Pierce thinks that the ostium and accessory openings of the antrum of Highmore have not been utilized sufficiently in the treatment of empyema. After a few remarks on the anatomy he describes his method of treatment by washing out the antrum and reports a number of cases. In conclusion he says: "1. There is a strong evidence to warrant the belief that in diseased antra, accessory openings are more frequently found than in healthy antra. 2. In a certain number of cases the ostium may be used to irrigate the antrum. 3. We should in all cases, whether for diagnosis or treatment, try for the ostium or accessory openings before resorting to surgical puncture, whether through the inferior or middle meatus, the canine fossa or alveolar process. 4. It is of no importance whether the opening through which we irrigate be the ostium or an accessory opening."

115. **Diagnosis of Adenoids.**—A number of conditions that may cause confusion and lead to diagnosis of adenoids in very young children are enumerated by Chappell. He has not, himself, been able to demonstrate to his satisfaction the presence of adenoids in young infants. Among the conditions which he mentions are lymphatism which may cause enlargement of the cervico-bronchial glands in which the mucosa of the trachea and bronchi are principally affected and which may often be present at birth. In all degrees of obstruction beyond the uvula the infant is obliged to remove the nipple from the mouth every few minutes to get air, but when the obstruction is lower down, the nipple may be retained in the mouth during feeding. When stenosis of the tracheo-bronchial tract exists, sonorous and asthmatic chest sounds may be heard while the child is nursing, which cease when the nursing is over. Lithemic infection is usually confined to the superficial tissues, but may spread beneath the pharyngeal aponeurosis, forming a small retropharyngeal abscess. When infants with a family history of gout or rheumatism have recurring attacks of rhinitis, pharyngitis, trachitis and bronchitis there may be indications that suggest adenoid obstruction. Syphilitic or gonorrheal rhinitis may produce nasal obstruction and congenital atelectasis may cause respiratory symptoms which may sometimes be mistaken for adenoids. Digestive disturbances causing vomiting and regurgitation of milk curds lodging in the nasal passages also give confusing symptoms. Large tongue, though rare, may be a serious cause of respiratory obstruction and Billard claims there is a non-traumatic esophagitis, which may cause considerable pressure on the trachea and larynx. Chappell has had patients in which he could make no other satisfactory diagnosis. Hypertrophic rhinitis is common in children though general among those of more advanced age. Septal spurs, foreign bodies in the nose, etc., should all be looked for in this connection.

118.—See abstract in The Journal of September 28, p. 850.

124. **Pernicious Anemia.**—From a review of the facts of this condition White concludes that we have in these cases to deal with some agent which increases blood destruction and interferes with blood regeneration both in the marrow and the lymphatic glands, and that it is not of the common order of the infections, from the different responses which the organism makes to it. The resistance of the individual probably plays a very important rôle and he thinks that from the analogous parasitic condition the agent is more likely to be an animal poison or possibly a ptomain than anything else. In short, he holds that we have here a special poison choosing for its seat the whole blood circulation.

128. **Tetanus.**—From the fact that tetanus germs are susceptible to cold and that the reduction of temperature interferes with their vital activity and sporulation, Rogers has employed ice applications in incipient cases where the tetanic conditions had already spread to the trunk, neck and extremities. The arrest of progress in the development of the disease was manifest in a few hours and after four days there was a gradual lessening of the convulsive symptoms which ceased entirely on the fifth day. The patient then suspended of his own accord, the ice treatment. The symptoms returned in thirty-six hours, but with diminished force. On renewal of the treatment the good results followed even more quickly and three days later treatment was permanently suspended. A second case is also mentioned where similar treatment was instituted with like results.

131.—See abstract in The Journal, xxxv, p. 1425.

134. **Gastrostomy.**—In the patient described by Meriwether there was a carcinomatous tumor of the pyloric end of the stomach and also a cardiac mass obstructing that region. Gastroenterostomy was performed with the Murphy button and gastrostomy as follows: An external opening had been made by an incision of four inches over the inner edge of the left rectus joined by a transverse one from its upper end extending to the left for three inches. A rubber tube was next inserted in about the middle of the anterior surface of the stomach, emerging at the end of the transverse incision through the skin. Two catgut sutures were applied below the opening in the stomach, then six sutures, each one-fourth of an inch further above and below the tube than the preceding one, the sutures being half an inch apart and passing through the peritoneum, then through one-fourth of an inch of the two external coats of the stomach, then over the tube, then through the stomach as before, and then through the peritoneum. A last suture was passed through the two coats of the stomach and then under the tube, making something like a purse-string suture. All these were of catgut. When tied they brought peritoneum to peritoneum and formed a fluid-tight, funnel-shaped canal leading from the skin to the opening in the stomach. The peritoneum was stitched around the portion of the tube where it emerged and the skin and muscle closed by through-and-through sutures of silkworm-gut. One fine catgut suture was placed through the tube where it entered the stomach to anchor it. The patient was fed before leaving the table after the stomach had been washed out. She came out of the operation well, gained in weight and about four months later appeared to be in good condition. Three months after the operation she removed the tube and refused to allow it to be permanently replaced. At one time it was left out thirty-six hours, but there was no difficulty in reintroducing it. Five months after the operation, however, the old difficulty in swallowing returned and she gradually sank, living, however until November. The button came away on the eighty-first day.

141. **Widal's Reaction.**—Pothier considers the positive Widal reaction of great value and always to be considered as indicating typhoid fever, while a negative result does not mean anything *per se*. While several negative results may strongly point to a non-typhoid case, the clinical course of the disease is a better criterion. He mentions a method of diagnosis used in the New Orleans Charity Hospital, consisting in making cultures from the urine of patients, which is collected in sterile tubes after careful asepsis of the parts and, if necessary, by catheterization. Two or three loopfuls from this urine are planted on an agar-culture tube or in bouillon, incubated for twenty-four hours and then tested with a known typhoid serum as to whether or not it is typhoid. As a rule these cultures are pure.

142. **Spinal Analgesia.**—Delaup briefly reports 22 cases and describes his method of using cocain injections. He has seen but little inconvenience from the operation; perfect analgesia was obtained in 90 per cent. and partial in 9 per cent. In 41 per cent. there were not the slightest subjective or objective symptoms. Nausea occurred in 36 per cent. and there was a slight general malaise for a few minutes. Headache was

the most common symptom, noted in 50 per cent. of the cases, never lasting more than from twelve to twenty-four hours; temperature elevation was of short duration, never above 102 F. Pronounced malaise, chills, depression, and in fact shock, was observed in but one case. Increased pulse-rate is a very unreliable symptom, the nervousness of the patient is liable to account for it. If there is febrile or irregular heart action small doses of strychnin or nitroglycerin may be administered hypodermically. It is a good plan to give a preliminary subcutaneous injection of strychnin with a little morphin. Involuntary defecation took place only once. He is not sure whether the disagreeable symptoms are the result of the drug itself, or the result of disturbance of the nerve centers from increase or decrease of intraspinal pressure. But the method can never be used with a certain class of patients, like children and nervous women, in which the loss of consciousness is essential. While he does not consider it an ideal anesthetic, or that it in any way replaces the general method, it has a special sphere of usefulness in genito-urinary and rectal surgery and surgery of the lower extremities. In many cases of pulmonary, cardiac or renal disease it would be far less dangerous than chloroform or ether.

152. **Vaccination.**—Runyon has little faith in glycerinated virus. He has found it ineffective in many patients and some patients he has known to suffer from subsequent smallpox when exposed. He believes that the humanized virus is best, though it is not certain that its immunity persists longer than that from points. The next best is bovine on bone slips. He thinks that children should be vaccinated in infancy and again in five years, and revaccinated when liable to be exposed to smallpox. In this way they will avoid serious effects from the operation which sometimes occur when it is delayed until ordinary immunity is completely lost.

153. **Hemaglobinuric Fever.**—With the two cases here reported Shropshire remarks in regard to the origin of the condition. He doubts entirely the effect of quinin in producing it, and considers the disease as a primary malignant fever due entirely to the action of the plasmodium. He uses quinin freely in cases with good results.

154.—This article has appeared elsewhere. See The Journal of September 7, ¶64, p. 663.

FOREIGN.

British Medical Journal, October 5.

Shock in Abdominal Operations. George A. Hawkins-Ambler.—The author does not attempt to give a definition of shock, but quotes a number that have been offered, among the more scientific of which he includes that of Erichson, who describes shock as being due to a general exhaustion of the nervous centers consequent upon extremely violent afferent impulse, and that of Goltz, quoted by Crile, as a vasomotor paralysis resulting from mechanical violence. While we have not a satisfactory definition, we have learned more in regard to the subject and he refers to Sherrington's work, pointing out that operative interference in a healthy animal is followed by a certain degree of apoplasmia or drying up of the blood. The degree of apoplasmia depends to some extent upon the severity of the lesion, but is always considerable and must always be taken into our calculation. With this increase in specific gravity, Sherrington also observes an increase in the hemoglobin content of the blood and increase in the number of chromocytes per unit volume. The ratio of leucocytes to chromocytes was always increased and there were alterations in the proportion of other blood cells. The different nerve cells also give important evidence. Crile quotes Hodge's investigations on microscopic investigations of nerve cells at rest and in fatigue, showing that repeated afferent stimuli exhaust the bulb; the equilibrium of the nervous system is more or less upset. We must differentiate also between shock and acute sepsis, which offers similar symptoms. Some cases of apparent shock are really cases of acute sepsis, and if we look in the mediastinal glands and other organs we shall find evidence of this. Special points, however, here given as important elements in the causation of shock are the matters of time and engorgement and dilatation of the splanchnic area. In abdominal operations in which we are operating in the midst of vasomotor nerves and ganglia which control an immense venous area, the dilatation of which must mean a remarkable difference in the blood pressure throughout the circulation, the effect on the heart might be immediate. The author refers especially here to Crile's work, one of the latest, most practical and suggestive on the subject. Bearing these things in mind, what are we to say about the treatment? The best he thinks is preventive. We should prepare for shock and minimize it by the very best methods. The old-fashioned plan of preparation of patients by a short holiday is an excellent thing in its way. Improvement in the general health should be looked after. We sometimes starve our patients too much before operation and with hot douches, drastic purges, etc., reduce them so that the addition of fear is all that is necessary to bring them to a state of semi-collapse before they get on the table. An empty stomach, desirable as it is in many cases, may be procured at too great a cost. Preliminary injection of saline solution into the rectum before operation may add a great deal to the patient's comfort and improve the chances, or a little brandy with hot water may be of advantage. The question of anesthetics is important also. Any anesthetic may have its action in increasing the shock. Crile finds that he prevents shock by cutting out the afferent impulses, blocking the nerves with cocain, but this is not so easy in abdominal surgery. Hawkins-Ambler's opinion is that the element of time is the most important; Lawson Tait's success he attributes largely to his rapidity in operating. The question of the temperature of the operating room, preliminary preparation, etc., is important, and he says it is a good plan to flood the peritoneum for a time with hot saline solution in protracted operations. The next point is thirst; if we take thickening of the blood as evidence and standard of shock the intense thirst is an indication of it and the practice of starvation in the hope that the thirsty tissues may be compelled to lap up the exudates into the peritoneal cavity to prevent sepsis, and peritonitis may very easily be overdone. Shock should be met by replacing fluids withdrawn from the circulation, by restoring to the dried blood the more spacious circulatory medium in which its cells may move without increasing the friction coefficient. If there is no vomiting, fluids may be given in small quantities by the mouth. Hot water can be sipped, and the very act of slowly sipping has been shown to improve the pulse by antagonizing the inhibitory action of the vagus. Minute doses of brandy and water also sipped at intervals have a very sedative effect. Saline injections given per rectum, or if necessary hypodermically into the veins are advantageous. The difference between shock and hemorrhage is perhaps after all not so great; it is largely the loss of oxygen carriers in the latter case. If the blood is pooled in the splanchnic veins, both plasma and corpuscles are removed from active usefulness. The introduction of saline will largely remedy this. With flushing of the peritoneum to prevent sepsis we shall also promote its resisting powers, and he insists, therefore, on the use of saline solutions. As for drugs, they must be secondary, and as to maintenance of body heat by wrapping the patient, etc., he has but few words to say. Very small doses of strychnia are of value, and also small doses of morphin and atropin given hypodermically before the patient leaves the table at the close of a severe operation.

When and How to Operate on Uterine Fibroids. William Duncan.—The author believes the following conditions call for interference in uterine fibroids: Hemorrhage, when there is severe menorrhagia or metrorrhagia and the uterus is enlarged by fibroids. The first thing to do is to dilate the cervical canal and explore the uterine cavity for polypi or submucous growths. This should be done before resorting to more radical measures. He does not believe much in operating through the vagina, and removal of the appendages to stop hemorrhage or arrest the growth of tumor. Hysterectomy can, he believes, be best carried out by the intraperitoneal method, which has the advantage of showing whether there are any adhesions of the bowel or omentum to the tumor, or whether the Fallopian tubes contain pus. The second indication for operation is when the tumor is causing pressure on the bladder, the rectum or cervical nerves. When it can be pushed above the brim of the pelvis and kept there, operation may be avoided, but when it can not, nothing but hysterectomy is of use. When a fibroid tumor takes on a rapid growth this is due either to cystic or mucoid degeneration and always calls for hysterectomy without delay. Lastly, when a fibroid complicates pregnancy the risks are greatly increased, though the position of the growth has much to do with this. If the fibroid is situated at the upper uterine segment or is subperitoneal and not impacted in the pelvis, pregnancy and labor may in many cases proceed naturally and terminate favorably. Such cases should not be interfered with. When it occurs in the lower portion of the pelvic, obstructing the pelvic brim, we have either to empty the uterus, to perform hysterectomy, or allow the case to go on to full term and save the child by Cesarean section and then remove the uterus. He would feel disposed in such cases to try abortion first, and if that failed to resort to hysterectomy. The dangers of shock with heart failure and tympanitis from intestinal paralysis are mentioned. In order to prevent the first it has been his custom to administer hypodermically 3 drops of liquor strychniæ, B. P., three times a day for a week prior to and a week after the operation. A nutritive enema after the operation is administered every four hours, with the addition of one-half an ounce of brandy if the patient is very feeble, and, if the flatus is not freely escaping twenty-four hours after operation, an ounce of spirits of turpentine in a pint of hot water is passed high up in the bowel. This may be, repeated in twelve hours. He attaches great importance to this and to the strychnia injections. As regards the operation itself, he ties off both the ovarian and uterine arteries on both sides before cutting down the peritoneal flaps; thus preventing loss of blood to any great extent. After the flaps are reflected down to the level of the tied uterine arteries, the cervix is cut across and the tumor removed. Any oozing points in the cervix are tied with catgut, and then the peritoneal flaps are carefully brought together with fine silk in a continuous Lembert suture. Where the tumor burrows between the layers of the broad ligaments and a large cavity is left after their removal, instead of draining this, he carefully whips the sides together from below upward by a continuous suture after all oozing has been controlled and the cases do perfectly well. The abdominal wall is sewed up by three layers of continuous suture, fine silk for the peritoneum, coarse silk for the sheaths of the recti and coarser for the skin. In this way he feels sure that the occurrence of ventral hernia later on is prevented.

On a New Gynecological Position. F. Jayle.—In this note in the *British Medical Journal,* Jayle points out that Scultetus had recommended what is really the Trendelenburg position before 1645, and there was also a drawing in a still earlier, 13th century publication, showing the position during the operation for hernia. What he specially calls attention to, however, is the combination of the ordinary position of the speculum or of the lithotomy position and of the Trendelenburg position. In order to obtain this it is necessary to have a balancing table with a system of shoulder rests, holding the patient in position without securing the lower members, which remain free. This can be used either for examination or operation. It has the advantage of throwing back the intestine, of determining by the entrance of air the dilatation of the vagina, which becomes almost vertical, and finally of stretching the anterior vaginal wall. It greatly facilitates the exploration of the tubes and ovaries, especially the uterus. The introduction of the speculum is very easy and exploration of the vaginal wall is easy, for it is sufficient to depress the perineum either with the finger or with a valve speculum in order to get a good view of the anterior walls always, and very frequently of the cervix. For operations it must be used combined with the lithotomy position. If the patient be put only in a half declivity, vaginal operation becomes much easier. The anterior wall is stretched out and with a weight valve you can press down the perineum, and no assistant is necessary for holding the valves. He specially calls attention to the utility of this method in vesico-vaginal fistula operations.

Ovarian Pregnancy. Hastings Gilford.—The published cases of ovarian pregnancy are reviewed by Gilford, who finds 16 cases and 12 probable ones, or 28 altogether. He thinks that many have been reported under the names of blood cysts, rupture of the ovary and ovarian apoplexy. He asks how conception within the Graafian follicle can take place. One explanation is that the sperm cell enters through the aperture produced by the bursting of a follicle and impregnates an ovum which has not yet escaped. The opening then heals over and pregnancy goes on in the sealed sac. The other is given by Schroeder, who thinks that the spermatozoa may possibly penetrate through the coat of the follicle at its most attenuated part. The former of these, he thinks, is the more probable, though it does not necessarily follow that the rent in the follicle closes.

Further Report on the New Operation for Prolapsus Uteri, with Notes of Forty Cases. J. Inglis Parsons.—Four years have elapsed since this author first adopted the operation here described. It does not interfere with pregnancy; the general idea is to strengthen the bands within the broad ligaments and enable them to hold the uterus up. The principle of treatment is very simple. It consists of taking advantage of Nature's reparative powers. The idea is simply to furnish a stimulus for the formation of lymph which repairs the ligaments when a joint is dislocated, and after thinking the subject over he decided to try this in uterine prolapse, to help Nature to repair the overstrained broad ligaments. The choice of re-agents requires consideration; it should be aseptic, the effect should be entirely local, and any absorption that takes place should be harmless. Sulphate of quinin most nearly fills all these conditions. When injected into the cellular tissue of the arm it appears to be precipitated and causes an effusion of lymph which remains for some weeks. It is also aseptic, and is a tonic to the general system if absorption occurs. A solution of this is injected into the cellular tissue of the broad ligaments from the vagina. The uterine arteries and veins lying on the inner side of the broad ligament are not in the way if the needle is inserted at the right point, as also holds true of the ureters, while the outer two-thirds of the lower half of the broad ligament contains no veins or arteries of any size or importance, and can be freely laid open from the vagina without having to tie a single vessel. The operation takes only a few minutes, and is not risky if performed with precision, proper care and antiseptic precautions. There is no rise of temperature as a rule. It is essential that the point of the needle should be within the folds of the ligaments and within the cellular tissue. An anesthetic is of advantage, though not absolutely necessary. The patient is placed in the lithotomy position and the parts aseptically prepared, the rectum, of course, having been emptied as well as the bladder. The posterior wall of the vagina is pressed down with a Sim's speculum, while the anterior is held up by a retractor. If they roll together in folds and block the view of the cervix two lateral retractors may be required. The injection is made with a thin, long, straight, rigid nozzle syringe and a needle about one inch in length and rather thicker than a hypodermic, and is passed on each side through the vaginal wall, taking care the direction of the needle is perpendicular to the base of the broad ligament and parallel to the long axis of the uterus. The needle should always be tested as the quinin solution corrodes it and it may then snap off. Some pain is felt after the injection, varying in different individuals. When the patient is lifted into bed the uterus should be well anteverted bimanually. A cup and stem india-rubber pessary secured by bands around the waist is inserted to keep the uterus well up until effusion of lymph has taken place. It will then be removed, as the uterus at the end of four or five days is held up by the effusion. The strength of the solution should be attended to. If too strong it will cause suppuration, or if too weak will not be sufficiently stimulating. For the past twelve months he has used a solution of 1 in 5, and the average amount inserted is 30 to 45 minims on each side. The temperature usually remains normal. There may be a slight aching in the pelvis for a few days. It does not follow that one injection is sufficient, the condition of the parts, weight of the uterus, duration of prolapse and labor afterward will have to be considered. None of his patients have ever had the least signs of cinchonism, though in most instances as much as 12 grains have been injected at one sitting. He tries to keep his patients at rest after the operation for a certain time as much as possible. Of the 40 cases that he has operated on and which he tabulates, only 2 have relapsed, 4 have been only improved, while the other 34 patients have remained well.

Presse Medicale (Paris), September 18.

Ocular Disturbances or Deformities in the Insane. M. De Montyel.—Mignot found that only 19.5 per cent. of 82 insane persons he examined had normal eyes, and that in 41.4 per cent. a deformity of the pupil coincided with some ocular disturbance. In the present communication, the results of the examination of 77 insane subjects showed that only 16.8 per cent. were normal in this respect. The pupils were unequal in 37.7 per cent. In certain subjects the ocular deformity and disturbances were very pronounced, but in the majority they were slight.

Revue Hebd. de Laryngologie (Bordeaux), September 21.

Ozena in Sinusitis. J. E. Torrent.—In five cases of sinusitis, the clinical symptoms of ozena were presented in a pronounced form but they all vanished as the sinusitis yielded to treatment. Torrent believes that true ozena is a morbid entity, rebellious to treatment, but that all the symptoms can accompany an ordinary sinusitis and simulate true ozena, unless the actual cause is discovered in the sinusitis.

Syphilitic Peripheral Paralysis of the Muscles of the Pharynx. Charles.—A hitherto healthy child of 3, with apparently healthy parents, manifested symptoms of pharyngeal paralysis, such as are usually attributed to a known or unnoticed diphtheria. In the absence of any probable source of diphtheritic infection, Charles instituted specific treatment, with the cure of all the symptoms in twelve days. The father confessed later that he had a "disease with pustules" before marriage.

September 28.

Lithiasis of the Submaxillary Gland. Lafarelle.—The pains caused by the presence of calculi in the submaxillary gland are frequently ascribed to the throat and ear, as they radiate in all directions. Two cases are described, one in a woman of 40, the other in a man of 45. Besides the functional and physical signs of salivary lithiasis, the paroxysmal pains, the alternating swelling and subsiding of a submaxillary tumor, the discharge of purulent saliva from the tumor on compression and palpation of a hard substance, the complete permeability of Wharton's duct for the catheter indicated the location of the trouble. The preferable operation is the systematic extirpation of the submaxillary gland, as the acute inflammation caused by the calculi is certain to be followed by sclerosis of the gland. Even if the inflammation is slight, the gland should be removed to prevent recurrence. The operation is simple and easy. The facial vein has to be severed, but the facial artery and the hypoglossus nerve are left intact. The insignificant scar is hidden by the lower jaw.

Varices of the Base of the Tongue as a Sign of Cancer of the Esophagus. Lefrancois.—Painful varices at the base of the tongue were the only lesions discoverable in three patients who complained of dysphagia. Each one died within a year from cancer of the esophagus. Lefrancois queries whether the varices may not have been the first clinical symptom of the cancer below, or whether their presence was a mere coincidence.

Semaine Medicale (Paris), September 25.

Syringomyelia of the Medulla and Pons. Raymond.—In the case described, motor paralysis of all the limbs, with spasmodic paralysis of the legs, dissociated sensibility and kyphoscoliosis coincided with other symptoms which indicated a lesion in the medulla, atrophy of the left half of the tongue, neuro-paralytic keratitis of the left eye, lateral nystagmus and anesthesia of the left trifacial nerve and of the mucosa of the back of the throat. Raymond's pupils have been studying the lesions in the autopsies of cases of syringomyelia during the last six years. They have found that the first lesion occurs in the region around the ependyma, near the central canal of the spinal cord, gradually invading the posterior cornu, the base of the anterior cornu and the adjacent portions of the white tracts. The lesion may range from an insignificant fissure with compact walls to an immense cavity involving all the elements of the cord and medulla. The spinal meninges may or may not be affected. Microscopic sections have fully demonstrated the inconstant relation of the syringomyelic gliosis with the central canal, and its special fissure-forming development. It is evident that certain cases of hypertrophic cervical pachymeningitis, but not all, belong in the domain of syringomyelia. Syringomyelia is, therefore, a definite affection like sclerosis in plaques. Its essence is a specific gliosis, produced independently of any other pre-existing lesion or affection of the spinal cord, such as myelitis or sclerosis, by the proliferation of the neuroglia in response to multiple pathogenic causes. This gliosis is to be distinguished from glioma and from cavity-forming myelitis. The syringomyelic lesion may spread laterally or longitudinally and consequently may affect the most varied anatomic and functional systems, inducing equally variable associations of symptoms. It may simulate more or less deceptively almost any one or all of the affections due to disease of the spinal cord or medulla, from progressive muscular atrophy to tabes and leprosy. But there is always a fourfold group of morbid phenomena more or less evident in syringomyelia: trophic disturbances, dissociated superficial sensibility and a tendency to scoliosis and paralytic motor troubles. The lesions are incurable, but as long as they are restricted to the spinal cord, long survival is possible. When the symptoms indicate that the medulla and pons have been invaded, a rapidly fatal termination is inevitable.

Simultaneous Appearance of Mosquitoes and Malaria. A. Billet.—This communication from Algeria states that a careful watch was kept for the first appearance of anopheles, to determine if it coincided with the first cases of malaria. The mosquitoes began to arrive June 15, and between June 26 and July 10, seven soldiers who had arrived during the winter, were received at the hospital affected with malarial fever, the first malarial patients of the year.

Two Cases of Actinomycosis in the Parametrium. C. Fehmers.—A woman in good health and menstruating normally, noticed pains in the right half of the abdomen and discovered a tumor. Three weeks later she entered the hospital and, with a diagnosis of pelvic peritonitis, the posterior cul-de-sac was incised and drained. The patient was much relieved but returned a month later on account of a lumbar abscess communicating with the initial pelvic focus. Actinomyces were found in the pus, and iodin treatment was commenced. A series of abscesses formed in the lumbar region and abdominal walls, with a stercoral fistula. After eighteen months of treatment, the patient seemed to be practically cured, although the fistula still persisted. She returned a year later with recurrence of severe symptoms, and died in collapse during the laparotomy. The intestines and uterus were found solidly fixed and altered by the lesions and adhesions. The patient had had one pregnancy years before. In the second case, the patient was a multipara, with abundant and prolonged menstruation. During a convalescence from typhoid fever, a sudden pain attracted attention to the right hypogastrium and a tumor was discovered, assumed to be a suppurating ovarian cyst. At the laparotomy the tissues were found much infiltrated and a focus of pus containing actinomyces was discovered. Vigorous local and general iodin treatment was instituted, and the patient seems to be completely recovered. The cases are reported in detail in the *Nederl. Tijdschr. v. Geneesk.* of June 29.

Deutsche Med. Wochenschrift, October 3.

Treatment of Anthrax. F. Schultze.—Strubell described last year a case of malignant pustule just below the eye, which he cured by the application of hot compresses, renewed every ten minutes, night and day, supplemented by injections of 12 c.c. of a 3 per cent. solution of carbolic acid. Schultze relates a similar case of malignant pustule also just below the eye. The treatment was restricted to the application of a sublimate 1 to 1000 dressing, in a 70 per cent. alcoholic solution over the ulcerating portions. Quinin was given in 30 cg. doses every three hours during the febrile period, and 30 cg. of naphthalin were administered occasionally on account of the diarrhea. The patient progressed even more rapidly to recovery than Strubell's patient, although the symptoms were if anything more serious. The intoxication is the chief danger in such cases, and it presents a clinical picture closely resembling that of typhoid fever, aside from the local phenomena. The bronchi and kidneys as well as the intestines were involved and the cerebral symptoms were the same as those observed in typhoid fever.

Electric Light Sweat Baths. Krebs.—As the results of experiences and observation at the hydrotherapeutic institution connected with the University of Berlin, Krebs announces that incandescent light baths induce profuse sweating more rapidly and at a lower temperature than is required for hot-air baths. This effect is probably due to the heat rays in these lights. The arc light is much less effective. Patients with organic heart defects may find these baths injurious.

Prognosis of Diabetes and Tuberculosis. G. Oeder.—It is usually supposed that tuberculosis in a diabetic subject runs an unusually rapid course. Oeder describes the case of a diabetic patient who has exhibited unmistakable symptoms of pulmonary tuberculosis for six years, but both diseases have seemed to be in *statu quo* for several years.

Monatsschrift f. Geb. u. Gyn. (Berlin), July.

Metastases in the Ovaries in Case of Primary Abdominal Malignant Disease Elsewhere. E. Kraus.—The 11 observations collected include 3 in which the primary carcinoma was located in the stomach, and 7 in the gall-bladder or biliary passages. The patients had been operated on for the easily diagnosed tumor in the ovaries, which was merely a metastasis of the small primary tumor elsewhere which had been completely overlooked. The slight symptoms on the part of the alimentary canal had been attributed to reflex irritation. The patients bore the ovariotomy well, but succumbed later to the gradual evolution of the primary tumor, which could easily have been removed at the same time if its presence had been suspected. Kraus urges search for a primary tumor when both ovaries form cancerous, knobby tumors, and section shows the characteristic peripheral arrangement of the tumor masses. If the ovaries are found even slightly enlarged and hard, during the extirpation of a primary neoplasm in any abdominal organ, they should be considered suspicious, especially if nodules are discovered in Douglas' pouch. He reports experiments which demonstrate that cancerous elements are able to penetrate into the intact ovary from its outer surface, even in the case of rabbits' ovaries, which are smaller and less exposed to danger of penetration than the human ovary.

August.

Stimulation of Labor by Intrauterine Rubber Bag. G. Hauffe.—The advantages of the rubber bags used by Hauffe are that when distended with fluid, they are comparatively hard, and prove an energetic stimulus to the contractions of the uterus, much more so than the soft bags ordinarily employed for this purpose.

September.

Diagnosis of a Vesicular Mole. W. Poten.—The diagnosis of a vesicular mole is sustained by the lack of elastic tension in the walls of the uterus, which feel like soft clay on palpation. There are also, in case of a vesicular mole, peculiar contractions of circumscribed portions of the uterine walls, occurring spasmodically and subsiding completely. In one case the uterus seemed to contain a hard myoma, the size of a fist, in an otherwise soft organ. Half an hour later, the supposed myoma had vanished to reappear again in another portion of the organ. The patient is not conscious of these contractions. In three cases described, the patients were in the sixth to the ninth month of pregnancy. In another case, the mole had ceased to proliferate, remained in the uterus like an inert foreign body and was finally expelled. In two other cases the symptoms had some analogy with those described, but a macerated fetus instead of a mole was found in each instance.

Heart Defects and Pregnancy. O. Fillner.—The prognosis of pregnancy in case of cardiac defect is not so serious as has been generally assumed, judging from the experiences at Schauta's clinic since 1892. They include 94 patients with 305 births, out of a total of 30,613 deliveries in the Maternity. Fillner has also collected 140 cases from the literature, with 520 births. The results show that with appropriate treatment the overwhelming majority of the patients pass through the stress of childbirth without any special disturbance or even a suspicion of their cardiac defect. Delivery is frequently longer than usual. In all cases of uncompensated cardiac defect a more or less extensive ring of necrosis is found at the edge of the placenta. The pregnancy was spontaneously interrupted in 20.2 per cent. of the cases, with a mortality of 25.5 per cent. for the children. Only a very small percentage succumbed to the heart trouble; 6.3 per cent. at Schauta's clinic and .9 per cent. of all those systematically investigated. Mitral stenosis alone seems to afford an unfavorable prognosis. In other conditions, it is not the kind, but the extent of the defect which is the decisive element. Only in the rarest cases is any unfavorable influence on the heart defect from the pregnancy to be discovered. In case of compensated defect, premature delivery is not indicated unless the patient was in peril of death in previous childbirths. In case of uncompensated defect premature delivery is indicated only when treatment has no chance of success; otherwise internal treatment should be applied first and after improvement has been obtained, the pregnancy should be artificially interrupted. Mitral stenosis, and the complication of a cardiac defect by chronic nephritis or tuberculosis, require more vigorous procedures. In case of compensated defect, the bougie alone should be used. If a fatal termination is imminent, the fetal membranes should be ruptured which will give temporary relief, and may prove useful in case of edema of the lungs. It is better not to wait too long before applying the forceps in case of an uncompensated cardiac defect. Marriage need be forbidden only in case of pronounced disturbances in compensation, or mitral stenosis or a defect complicated by tuberculosis and chronic nephritis. If severe disturbances in compensation appear during the course of a pregnancy, future pregnancies should be forbidden, and in case of deadly peril during a pregnancy, the patient should be rendered sterile.

Muenchener Med. Wochenschrift, September 24.

Senile Pruritus of the Tongue. E. Baumgarten.—During the last three years Baumgarten has had occasion to observe two cases of pruritus of the tongue, occurring in elderly women, with all the characteristics of senile pruritus of the skin, and in one case followed later by cutaneous manifestations. A long array of remedies was tried, but without avail, the pruritus persisting unaffected. Some local or general cause can usually be found for tongue troubles and the diagnosis of senile pruritus should not be made until after the exclusion of affections of the stomach or intestines, constipation or other general cause, including the dry catarrh of the throat which is a frequent companion of the menopause, and usually coincides with dryness, smarting and burning sensations in the tongue. The latter may also occur in cases of disturbed menstruation. Pure neuralgia of the tongue is extremely rare, but neurasthenic disturbances involving the tongue are not infrequent in both men and women. In three cases Baumgarten diagnosed.

tabes from the pains in the tongue alone, confirmed by the later course of the disease. Pains and smarting of the tongue, especially when accompanied by ptyalism, are very suspicious of commencing paralysis. In other cases, the symptoms noticed in the tongue were the precursors of some local affection. Varices of the base of the tongue are cauterized by some physicians, but this is useless unless the general cause inducing them is removed.

Lysol Intoxication. G. Burgl.—Two cases are related in which pure lysol was administered to a child by mistake, and eighteen cases of lysol intoxication in the literature are reviewed. They show that prompt use of the stomach pump was followed by the recovery of all the patients thus treated, while the neglect of this measure was almost invariably fatal. The solution should never be stronger than 1 per cent. for external application and .5 per cent. for irrigating internal cavities. It should never be used long at a time. One death has been known from the external application of pure lysol on the intact skin. If it is administered internally, the minimal dose should be taken as the standard, and it should never be given except for a brief period and better not at all, in case of children or feeble patients. In the 18 cases collected, the intoxication occurred in 13 from internal and in 5 from external use of the agent. Nine of the patients died, 5 children and one adult after internal administration, and 2 adults and one child after the application of pure lysol externally, by mistake for the 1 per cent. solution that had been ordered. The largest dose from which the patient recovered was 60 gm., taken by a woman, and 25 gm. by a 4-year-old child. The smallest dose that proved fatal was a teaspoonful, about 4 to 5 gm. of pure lysol, in children from 5 days to 8 years old.

Tamponing the Abdominal Cavity with Air to Arrest Threatening Hemorrhage. G. Kelling.—A series of experiments on dogs and cadavers are described, showing the harmlessness of this measure and its efficacy in arresting threatening internal hemorrhage. The accumulations of ascitic fluid in the abdomen prove that it will tolerate considerable stretching. Tests on seven cadavers of adults between 37 and 87, demonstrated that the abdomen could be thus inflated to a pressure of 150 mm. mercury or 1.5 meter water without laceration of the peritoneum. The apparatus consists of a T-shaped glass tube connected by a rubber tube with the mercury column at one end: with a double rubber air bulb at the other, and with the puncturing needle on the third branch. The tube connecting with the needle is interrupted by two bottle-shaped bottomless glass tubes, connected by a short rubber tube. The broad part of these bottle-shaped tubes is loosely packed with cotton to filter the air. It is injected under close supervision of the respiration and heart action, until a negative pressure of 30 mm. mercury or, better still, of 50 mm. is obtained. The stomach, bladder and rectum are liable to evacuate their contents by the mechanical effect of the pressure, for which preparations must be made. In case of hemorrhage of the stomach, some substance to promote coagulation should be administered by the mouth before injecting the air. After numerous tests, Kelling found pulverized chalk mixed with milk, the most effective local measure for this purpose. It can be administered by the mouth in not too small amounts. He has never had an opportunity to apply this tamponing measure in the clinic, but his tests on large dogs have been so successful that he is confident it will prove extremely useful in practical application to patients. He warns that the subjective sensations are no criterion, but that the circulation and pulse must be carefully watched. The first part of his report was published in The Journal of October 12, p. 1010.

Brazil-Medico (Rio de Janeiro), September 1.

Death After Spinal Tropa Cocainization. D. de Almeida.—The patient in the case reported was 80 years of age, and had eaten nothing for three or four days. The operation was undertaken for the relief of incarcerated inguinal hernia, and 2 cg. of tropacocain were injected in the subarachnoid space, in a 2 per cent. solution. A few minutes after the operation had been completed, the pulsations of the heart gradually grew less and less perceptible, and the patient died with no other symptoms except this quiet failing of the heart action.

Proofs in Favor of the Transmission of Yellow Fever by Mosquitoes. E. M. Ribas.—The superintendent of the board of health at Sao Paulo, Dr. Ribas, is convinced of the plausibility of the mosquito theory and suggests that mosquitoes may bite during the hours of early morning, while the subjects are still sleeping, as the culex teniatus is not a night insect. He describes a convincing incident in the outbreak of yellow fever at Sao Paulo in 1900. No cases had been known in town for a long time, when an Italian ship arrived from Rio, January 2, and one of the crew suffering from yellow fever was received in the hospital. Fourteen days later, five other yellow-fever patients were admitted. All were sailors from two vessels moored along the quays near the Italian ship. The culex teniatus is found in the street that fronts the quays, and the row of ships formed as it were, a row of dwellings on the seaward side of the street, where the culex could easily penetrate. Other sailors were affected soon afterward; all being men who had lived a number of months in the town without previous infection. The epidemic was arrested after it had attacked 400 out of the 50,000 inhabitants of the town. The sanitary measures applied in the infected ships and dwellings probably destroyed the infected mosquitoes, and thus contributed to the arrest of the epidemic.

Cirugia Contemporanea (Mexico), September 15.

Intra-Arachnoid Cocainization in Mexico. R. Norma.—Eighty-seven operations have been reported in Mexico, done under spinal cocainization. No threatening by-effects were noted in any case; in 31 no symptoms of any kind were observed, in 32 the usual slight headache, vomiting or nausea. In one case an overdose was used, with the symptoms to be anticipated in such a case. In two other cases, one a hysteric and one a much debilitated hemiplegic, the temperature rose to 104 F. in one, and syncope occurred in the other. Norma considers that the simplicity and prompt efficacy of this method of surgical analgesia commend it particularly for alcoholic subjects.

Cronica Medica Mexicana (Mexico), October 1.

Mercury for Injection Into Vessels for Radiography. D. Garcia.—Mercury answers all the conditions required to render even the most delicate macroscopic capillaries visible in radiography. Garcia has devised an apparatus for the purpose, a glass canula with two stopcocks and graduated receptacle, which enables the injection to proceed without admixture of air. Radiographs of anatomic specimens thus prepared were remarkable for the wealth of details, as even a thickness of one-tenth of a millimeter casts a clear shadow.

Value of Ferric Chlorid in Therapeutics. J. B. Hernandez.—The remarkable anticongestive, antiphlogistic, antisuppurative and anti-exudative action of ferric chlorid is proclaimed by Hernandez. He considers it superior to all other substances for the treatment of superficial inflammatory or catarrhal lesions. It is ineffective in profound inflammation and actually injurious in chronic inflammation But it has proved remarkably beneficial in his experience in erysipelas, phlegmons, smallpox, eczema, herpes zoster, and catarrh of the vagina, cervix and conjunctiva. It is also valuable in acne rosacea, anthrax, hemorrhoids, gastritis, otitis, rhinitis, rectitis, gonorrhea and catarrhal metritis of the fundus. He uses the chlorid in "Pravaz's solution," and appends to this communication numerous case—reports to substantiate his statements.

Cronica Medica (Lima), xvii, 301 and 302.

Causal Agent of Verrugas Peruana. A. L. Barton.—The researches of three years have been crowned with success, Barton announces, by the discovery of the bacillus derived from the spleen, blood and mesenteric ganglia of patients suffering from verrugas. Inoculated into animals it produces the typical symptoms of the clinical disease. It is extremely motile, stains readily, is not pyogenic, and is more pathogenic for the mule than for the dog, the only animals experimented on.

Queries and Minor Notes.

TEACHING OF PHYSICAL THERAPEUTICS.

Philadelphia, Oct. 8, 1901.

To the Editor:—In an editorial in The Journal of Oct. 5, 1901, p. 916, you refer to the subject of the "teaching of physical therapeutics," and state that there are at present being published in English and German, systems of therapeutics in which physical agents especially are discussed. I shall be under many obligations to you if you will kindly indicate the publications to which you refer, because I am very much interested in this subject and desire all the information with regard to publications obtainable.

B. H. D.

Ans.—P. Blakiston's Son & Co. are publishing a "System of Physiologic Therapeutics," edited by Dr. S. Solis-Cohen; there is in process of publication a "Handbuch der Physikalischen Therapie," edited by Goldscheider and Jacob (George Thieme, Leipsic). Further, there is a German periodical, *Zeitschrift für diätetische und physikalische Therapie*, edited by Leyden and Goldscheider, and there is also published in Great Britain a *Journal for Physiological* (or Physical) *Therapeutics.*

AKOUPHONE.

Concordia, Kan., Sept. 18, 1901.

To the Editor:—In The Journal of April 6, 1901, p. 982, is a description of the akouphone and akoulalion by J. R. Hutchinson, before the New York Academy of Medicine. Can you give me the address of the manufacturer? I have a child I desire to try one on.

W. F. S.

Ans.—Address the Akouphone Company, 43 E. 20th St., New York City.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., October 3 to 9, inclusive:

William J. Calvert, lieutenant and asst.-surgeon, U. S. A., leave of absence granted.

W. Fitzhugh Carter, major and surgeon, U. S. A., will accompany the Third Battalion of Engineers to Washington Barracks, D. C., and thereafter return to his proper station, Fort Totten, N. Y.

Max F. Clausius, contract surgeon, previous orders directing him to proceed to his home for annulment of contract, revoked.

John Ryan Devereux, lieutenant and asst.-surgeon, U. S. A., from duty at Washington Barracks, D. C., via Tampa, Fla., to Havana, Cuba, for assignment in the Department of Cuba.

Clyde S. Ford, lieutenant and asst-surgeon, U. S. A., former orders directing him to proceed to Fort Morgan, Ala., revoked; he will repair to Washington, D. C., and report to the Surgeon-General for instructions.

Joseph H. Ford, lieutenant anc [illegible] A., from Fort Washington, Md., to duty at [illegible] D. C.

Myer Herman, captain and asst. [illegible] tendered his resignation, is honorably discharged from the service of the United States, to date from October 8, 1901.

James H. Holloway, contract surgeon, leave of absence extended.

William L. Kneedler, major and surgeon, U. S. A., leave of absence granted.

Conrad E. Koerper, lieutenant and asst.-surgeon, U. S. A., now on duty at the General Hospital, Washington Barracks, D. C., to report for temporary duty to the commanding officer of that post.

Clarence B. Millhoff, lieutenant and asst.-surgeon, U. S. A., leave of absence extended.

Arthur W. Morse, lieutenant and asst.-surgeon, U. S. A., from the U. S. General Hospital, Presidio of San Francisco, Cal., to post duty at Fort Walla Walla, Wash.

Edward L. Munson, captain and asst.-surgeon, U. S. A., will, on the completion of his present duty at the Pan-American Exposition, Buffalo, N. Y., repair to Washington, D. C., for duty in the office of the Surgeon-General.

Junius L. Powell, major and surgeon, U. S. A., is relieved from further duty in the Division of the Philippines and assigned to post duty at Fort Hamilton, N. Y.

Frederick F. Russell, lieutenant and asst.-surgeon, U. S. A., now in New York City, will proceed to Fort Washington, Md., for post duty.

Paul S. Shillock, major and surgeon, U. S. A., leave of absence granted.

Herbert M. Smith, lieutenant and asst.-surgeon, U. S. A., recently appointed, from Salem to Fort Monroe, Va., for temporary duty.

W. Manley Waterhouse, contract surgeon, former orders relieving him from further duty on the transport *Logan*, and from temporary duty at the General Hospital, Presidio of San Francisco, Cal., and directing him to proceed to Fort Grant, Ariz., for post duty, revoked.

Navy Changes.

Changes in the Medical Corps of the Navy, week ending Oct. 12, 1901:

Surgeon L. L. Von Wedekind, detached from the Puget Sound Naval Station and ordered home and to wait orders.

Surgeon O. D. Norton, detached from the *Monadnock*, on reporting of relief, and ordered home and to wait orders.

P. A. Surgeon D. H. Morgan, ordered to the *Philadelphia*.

P. A. Surgeon A. W. Dunbar, detached from the Naval Hospital, Mare Island, Cal., and ordered to the Puget Sound Naval Station.

P. A. Surgeon S. G. Evans, detached from the *Solace*, upon reporting of relief, and ordered home and to wait orders.

P. A. Surgeon A. R. Alfred, detached from the Marine Barracks, Cavite, P. I., and ordered to the *Monadnock*.

P. A. Surgeon J. M. Moore, detached from the *Franklin*, upon reporting of relief, and ordered to the *Indiana*.

Asst.-Surgeon C. G. Smith, detached from the *Alvarado* and ordered to the *Marietta*.

Asst.-Surgeon F. E. McCullough, detached from the *Philadelphia* and ordered to the Naval Hospital, Mare Island, Cal.

Asst.-Surgeon J. F. Murphy, detached from the *Indiana*, upon reporting of relief, and ordered to the *Solace* for temporary duty, and then to the Marine Barracks, Cavite Naval Station.

Asst.-Surgeon W. H. Bell, ordered to the *Franklin*.

Asst.-Surgeon D. G. Beebe, detached from the *Marietta*, upon reporting of relief, and ordered home to wait orders.

Asst.-Surgeons A. M. Fauntleroy and L. W. Bishop, commissioned assistant-surgeons from Sept. 28, 1901.

Surgeon C. F. Stokes, detached from the *Oregon* and ordered to the *Solace*.

Surgeon G. A. Lung, detached from the Marine Barracks, Cavite Naval Station, on reporting of relief, and ordered home and to wait orders.

Surgeon L. W. Spratling, commissioned surgeon from Sept. 28, 1901; detached from the Naval Hospital, Cavite, P. I., on reporting of relief, and ordered home and to wait orders.

P. A. Surgeon M. S. Guest, detached from the Naval Hospital, Philadelphia, Pa., and ordered to the *Solace*, for temporary duty, and ordered to the Cavite Naval Station, on arrival at the Asiatic Station.

P. A. Surgeon A. Farenholt, ordered to the *Independence*.

P. A. Surgeon M. K. Johnson, detached from duty at Guam, on reporting of relief, and ordered to the Marine Barracks, Cavite Naval Station.

Asst.-Surgeon C. D. Langhorne, ordered to the Naval Hospital, Naval Home, Philadelphia, Pa.

Asst.-Surgeon W. Seaman, detached from the *Independence*, on reporting of relief, and ordered to the *Solace* for temporary duty, and ordered to duty at Guam, on arrival at that place.

Asst.-Surgeon H. M. Tolfree, detached from the *Columbia* and ordered to the *Solace* for temporary duty, and ordered to duty at Guam, on arrival at that place.

Asst.-Surgeon J. B. Dennis, detached from the Naval Academy and ordered to the Naval Hospital, New York.

Asst.-Surgeon R. M. Young, detached from the New York Navy Yard and ordered to the *Columbia*.

Asst.-Surgeon R. M. Fauntleroy, ordered to the Naval Academy.

Asst.-Surgeon J. J. Snyder, detached from duty at Poloc, P. I., and ordered to the Naval Hospital, Cavite, P. I., for treatment.

P. A. Surgeon J. A. Guthrie, detached from the *New York* and ordered to duty at Port Isabella, P. I.

Asst.-Surgeon R. K. McClanahan, detached from duty at Port Isabella, P. I., and ordered to duty at Poloc, P. I.

Asst.-Surgeon F. A. Asserson, detached from the *General Alava* and ordered to the *New York*.

Asst.-Surgeon F. L. Benton, detached from the *Brooklyn* and ordered home.

Health Reports.

The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended Oct. 5, 1901:

SMALLPOX—UNITED STATES.

Alaska: Dawson, Oct. 1, 6 cases.

District of Columbia: Washington, Sept. 28-Oct. 5, 1 case.

Indiana: Michigan City, Sept. 30-Oct. 7, 1 case.

Massachusetts: Sept. 30-Oct. 5, Boston, 9 cases, 1 death; Newton, 1 case.

Michigan: Detroit, Sept. 30-Oct. 5, 1 case.

Minnesota: Minneapolis, Sept 30-Oct. 5, 1 case.

Nebraska: Omaha, Sept. 30-Oct. 5, 2 cases.

New Jersey: Newark, Sept. 30-Oct. 5, 2 cases, 2 deaths.

New York: Sept. 30-Oct. 5, Elmira, 1 case; New York, 7 cases, 2 deaths.

Ohio: Cleveland, Sept. 30-Oct. 5, 4 cases.

Pennsylvania: Erie, Sept. 21-28, 2 cases; Philadelphia, Sept. 30-Oct. 5, 40 cases, 6 deaths.

Utah: Salt Lake City, Sept. 30-Oct. 5, 2 cases.

SMALLPOX—FOREIGN.

Austria: Prague, Sept. 7-14, 1 case.

Belgium: Sept. 14-21, Antwerp, 5 cases, 1 death; Ghent, 1 death.

Brazil: Pernambuco, Aug. 15-31, 73 deaths; Rio de Janeiro, Aug. 18-Sept. 1, 115 deaths.

Canada: Halifax, Sept. 22-Oct. 5, 20 cases; Winnipeg, Sept. 14-21, 1 case.

Colombia: Colon, Sept. 30, epidemic.

France: Paris, Sept. 7-14, 2 cases.

Great Britain: Dundee, Sept. 14-28, 2 cases; London, Sept. 14-21, 288 cases, 13 deaths.

India: Bombay, Sept. 3-10, 1 death; Calcutta, Aug. 24-Sept. 7, 4 deaths; Madras, Aug. 24-Sept. 6, 8 deaths.

Mexico: City of Mexico, Sept. 15-22, 1 case.

PLAGUE—FOREIGN.

Philippine Islands: Manila, Aug. 10-24, 15 cases.

PLAGUE—FOREIGN.

Brazil: Rio de Janeiro, Aug. 18-Sept. 1, 5 deaths.

India: Bombay, Sept. 3-10, 275 deaths; Calcutta, Aug. 24-Sept. 7, 34 deaths; Karachi, Aug. 25-Sept. 8, 35 cases, 11 deaths.

YELLOW FEVER.

Brazil: Rio de Janeiro, Aug. 18-Sept. 1, 3 deaths.

Costa Rica: Port Limon, Sept. 14-28, 9 cases, 7 deaths.

Cuba: Havana, Sept. 21-28, 1 case.

Mexico: Merida, Aug. 31-Sept. 14, 5 deaths; Vera Cruz, Sept. 22-29, 2 cases, 2 deaths.

CHOLERA.

India: Bombay, Sept. 3-10, 4 deaths; Calcutta, Aug. 24-Sept. 7, 9 deaths; Madras, Aug. 24-Sept. 6, 254 deaths.